



Cable & Wire Catalog

v 2018.01



Borsan Srl

We are the Italian sales and distribution channel of leading cable and wire producer Borsan Group. As Borsan Srl, we have the experience and knowledge to develop unique products in cooperation with our customers and produce them with the highest quality and efficiency.

Our product portfolio covers almost every type of low voltage cables such as, power distribution cables, overhead lines, building installation cables, appliance cables, medical cables, automotive cables, control cables, electronic cables, telecommunication cables, special cables, single wires and conductors.

Our main goal is to provide highest quality, earliest delivery time and best price for value while being always open to new conversations with our business partners.

Borsan Group

Borsan Group is an international group that operates in different sectors with 17 companies, employing more than 2000 people. Cables, LED lighting fixtures, wood furnitures, medical, construction and media are main business areas.

Borsan Group is privately owned by Turkish businessman Mr. Adnan Ölmez and his family, since 1984. While there are a lot of products and services, cable and lighting products are still the core business for Borsan Group and Borsan Srl.



Visit www.borsan.it for more information!



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Low voltage copper conductor power cables

Residential buildings, power distribution networks, lighting systems, industrial buildings and power plants are the main usage areas. They may be used in direct current between 50 V and 1000 V, alternating current between 75 V and 1500 V.

Our products have several country approvals and CPR, DOP documents.

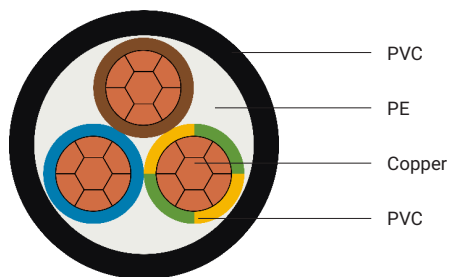
Cables can be modified for special requirements such as extra UV protection, underground protection with galvanized steel armor or special customer requests.

NY Y

Cu, Cl1-Cl2, 0,6/1 kV, 70 °C, Black, PVC, PE, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper RE: Class 1, RM: Class 2 RE: Class 1, RM: Class 2
Insulation	Material Marking	PVC acc. To DIV-4 HRN HD 308 S2 / VDE 0293-308
Filler	Material	PE
Outer Jacket	Material Color Diameter	PVC acc. to DMV-5 Black See the table
Rating	Nominal Voltage Test Voltage Static Temperature Range Dynamic Temperature Range Bending Radius	0,6/1 kV 4 kV -30 °C up to +70 °C -5 °C up to +50 °C 12 x Diameter
Tests	Flame Retardant	IEC 60332-1
Approvals	Certificates Available	VDE, CPR, TSE
Reference Standart	Main Alternative	TS IEC 60502-1 VDE 0276 part 603
Available Related Products	With Additional Covers With Sectoral Shape Conductor	NYRY, NYFGBY, NYBY, NYCY NY Y (SM)

Application

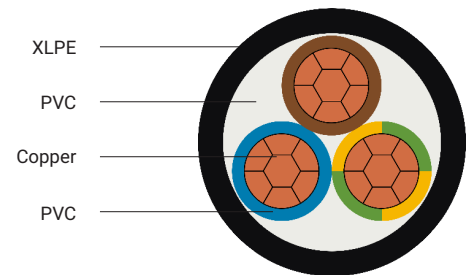
Distribution and signal power cable for static outdoor application (with protection against direct UV-irradiation), in ground, in water, within facilities, in cable canals, in concrete, in conditions where heavier mechanical loads and specially tensile strains, are not expected. Used in electric power plants, transformer stations, industrial plants, metropolitan networks and in other electric plants, same as for connection of signalling devices in industry, traffic and similar.

Information Chart

Cu, Cl1-Cl2, 0,6/1 kV, 70 °C, Black, PVC, PE, PVC

Conductor Count	Conductor Section	Outer Diameter	Current Carrying Capacity		Conductor Resistance	Net Weight	Amount of Packing	Packing Type
No.	mm ²	mm	Air A	Ground A	ohm/km (20 °C)	kg/km	m	R: Reel, C: Coil
1	4 RE	6,7	37	50	4,61	100	100	C 100
1	6 RE	7,3	47	62	3,08	125	100	C 100
1	10 RM	8,1	64	83	1,83	145	1000	R 600
1	16 RM	9,1	84	107	1,15	206	1000	R 700
1	25 RM	10,8	114	138	0,727	307	1000	R 800
1	35 RM	12	139	164	0,524	405	1000	R 800
1	50 RM	13,4	169	195	0,387	527	1000	R 900
1	70 RM	15,4	213	238	0,268	744	1000	R 1000
1	95 RM	17,8	264	286	0,193	1017	1000	R 1000
1	120 RM	19,2	307	325	0,153	1255	1000	R 1100
1	150 RM	21,2	352	365	0,124	1539	1000	R 1200
1	185 RM	23,9	406	413	0,0991	1941	1000	R 1300
1	240 RM	26,9	483	479	0,0754	2519	1000	R 1500
1	300 RM	29,7	557	541	0,0601	3069	1000	R 1500
2	1,5 RE	9,9	19,5	27	12,1	141	100	C 100
2	2,5 RE	10,7	25	36	7,41	175	100	C 100
2	4 RE	12,4	34	47	4,61	245	100	C 100
2	6 RE	13,4	43	59	3,08	304	100	C 100
2	10 RM	16	59	79	1,83	453	1000	R 1000
2	16 RM	18	79	102	1,15	618	1000	R 1100
2	25 RM	20,9	106	133	0,727	882	1000	R 1200
2	35 RM	23	129	159	0,524	1250	1000	R 1300
3	1,5 RE	10,3	19,5	27	12,1	160	100	C 100
3	2,5 RE	11,2	25	36	7,41	204	100	C 100
3	4 RE	13	34	47	4,61	288	100	C 100
3	6 RE	14,1	43	59	3,08	366	100	C 100
3	10 RM	16,7	59	79	1,83	541	1000	R 1000
3	16 RM	18,8	79	102	1,15	751	1000	R 1200
3	25 RM	22,2	106	133	0,727	1103	1000	R 1200
3	35 RM	25,6	129	159	0,524	1499	1000	R 1400
3	50 RM	29	157	188	0,387	1964	1000	R 1500
3	70 RM	33,2	199	232	0,268	2725	1000	R 1600
3	95 RM	38,8	246	280	0,193	3753	1000	R 1800
3	120 RM	41,9	285	318	0,153	4585	1000	R 1800
3	150 RM	46,4	326	359	0,124	5631	500	R 1600
3	185 RM	52	374	406	0,0991	7071	500	R 1700
3	240 RM	58,9	445	473	0,0754	9189	500	R 1800
3	300 RM	65,8	511	535	0,0601	11326	250	R 1600
3	16 + 10 RM	21	79	102	1.15/1.83	910	1000	R 1200
3	25 + 16 RM	24,5	106	133	0.727/1.15	1323	1000	R 1300
3	35 + 16 RM	26,5	129	159	0.524/1.15	1640	1000	R 1400
3	50 + 25 RM	30,7	157	188	0.387/0.727	2234	1000	R 1500
3	70 + 35 RM	34,7	199	232	0.268/0.524	3056	1000	R 1600
3	95 + 50 RM	40,1	246	280	0.193/0.387	4163	500	R 1500
3	120 + 70 RM	43,8	285	318	0.153/0.268	5217	500	R 1500
3	150 + 70	47,6	326	359	0.124/0.268	6201	500	R 1600
3	185 + 95 RM	54,2	374	406	0.0991/0.193	7972	250	R 1500
3	240 + 120 RM	60,4	445	473	0.754/0.153	10198	250	R 1500
4	1,5 RE	11,1	19,5	27	12,1	189	100	C 100
4	2,5 RE	12,1	25	36	7,41	243	100	C 100
4	4 RE	14,1	34	47	4,61	347	100	C 100
4	6 RE	15,4	43	59	3,08	447	100	C 100
4	10 RM	19,6	59	79	1,83	730	1000	R 1200
4	16 RM	21,2	79	102	1,15	968	1000	R 1300
4	25 RM	25,4	106	133	0,727	1445	1000	R 1500
4	35 RM	28,2	129	159	0,524	1882	1000	R 1600
4	50 RM	32,5	157	188	0,387	2517	1000	R 1700
4	70 RM	36,9	199	232	0,268	3465	500	R 1500
4	95 RM	42,6	246	280	0,198	4716	500	R 1600
4	120 RM	46,5	285	318	0,153	5838	500	R 1800
4	150 RM	51,4	326	359	0,124	7155	250	R 1500

4	185 RM	57,8	374	406	0,0991	9009	250	R 1600
4	240 RM	65,5	445	473	0,0754	11718	250	R 1700
5	1,5 RE	12,9	19,5	27	12,1	249	1000	R 800
5	2,5 RE	14	25	36	7,41	317	1000	R 900
5	4 RE	16,3	34	47	4,61	449	1000	R 1000
5	6 RE	17,7	43	59	3,08	572	1000	R 1100
5	10 RM	20,9	59	79	1,83	846	1000	R 1200
5	16 RM	23,5	79	102	1,15	1178	1000	R 1300
5	25 RM	28,4	106	133	0,727	1773	1000	R 1500
5	35 RM	31,8	129	159	0,524	2333	1000	R 1600
5	50 RM	35,8	157	188	0,387	3040	1000	R 1700
5	70 RM	41,3	199	232	0,268	4260	500	R 1600
5	95 RM	47,7	246	280	0,198	5798	500	R 1700
5	120 RM	51,4	285	318	0,153	7093	250	R 1500
5	150 RM	56,9	326	359	0,124	8703	250	R 1600
5	185 RM	64,2	374	406	0,0991	10989	250	R 1800
5	240 RM	72,4	445	473	0,0754	14230	250	R 1800
7	1,5 RM	13,8	19,5	27	12,1	300	1000	R 800
7	2,5 RM	15	25	36	7,41	390	1000	R 900
10	1,5 RM	16,8	19,5	27	12,1	450	1000	R 1000
10	2,5 RM	18,4	25	36	7,41	590	1000	R 1000
12	1,5 RM	17,2	19,5	27	12,1	490	1000	R 1000
12	2,5 RM	18,9	25	36	7,41	640	1000	R 1100
14	1,5 RM	18	19,5	27	12,1	540	1000	R 1000
14	2,5 RM	19,7	25	36	7,41	710	1000	R 1100
15	1,5 RM	18,8	19,5	27	12,1	590	1000	R 1100
15	2,5 RM	20,7	25	36	7,41	780	1000	R 1100
16	1,5 RM	18,8	19,5	27	12,1	600	1000	R 1100
16	2,5 RM	20,7	25	36	7,41	800	1000	R 1100
19	1,5 RM	19,7	19,5	27	12,1	670	1000	R 1100
19	2,5 RM	21,7	25	36	7,41	900	1000	R 1200
24	1,5 RM	23,2	19,5	27	12,1	900	1000	R 1200
24	2,5 RM	24,4	25	36	7,41	1160	1000	R 1300



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper RE: Class 1, RM: Class 2 RE: Class 1, RM: Class 2
Insulation	Material Marking	XLPE acc. to DIX-3 HD 308 S2 / VDE 0293-308
Filler	Material	PVC
Outer Jacket	Material Color Diameter	PVC acc. to DMV-6 Black See the table
Rating	Nominal Voltage Test Voltage Static Temperature Range Dynamic Temperature Range Bending Radius	0,6-1 kV 4 kV -20 °C up to +70 °C -5 °C up to +50 °C 12 x Diameter
Tests	Flame Retardant	IEC 60502-1
Approvals	Certificates Available	SII
Reference Standart	Main Alternative	TS IEC 60502-1 VDE 0276 part 603
Available Related Products	With Additional Covers With Sectoral Shape Conductor	N2XRY, N2XFGBY, N2XBY, N2XCY N2XY (SM)

Application

Distribution and signal power cable for static application in ground, in water, within facilities, in cable canals, in concrete, where heavier mechanical stresses are not expected, and the cable has to be protected against mechanical damages, also in conditions where cables are not exposed to heavier tensile strains. Used in electric power plants, transformer stations, industrial plants, metropolitan networks and in other electric plants where heavier current and thermal loads are expected (operating temperature of conductor up to 90 °C).

Conductor Count	Conductor Section	Outer Diameter	Current Capacity		Conductor Resistance at 20 °C	Net Weight	Amount of Packing	Packing Type
No.	mm ²	mm	Air A	Ground A	ohm/km	kg/km	m	R: Reel, C: Coil
1	4 RE	6,45	44	54	4,61	100	1000	R 500
1	6 RE	6,95	56	67	3,08	125	1000	R 500
1	10 RM	8,1	77	89	1,83	139	1000	R 600
1	16 RM	9,1	102	115	1,15	198	1000	R 700
1	25 RM	10,8	138	148	0,727	295	1000	R 700
1	35 RM	11,85	170	177	0,524	387	1000	R 800
1	50 RM	13,35	207	209	0,387	508	1000	R 900
1	70 RM	15,25	263	256	0,268	715	1000	R 1000
1	95 RM	17,15	325	307	0,198	964	1000	R 1000
1	120 RM	18,65	380	349	0,153	1199	1000	R 1100
1	150 RM	20,75	437	391	0,124	1475	1000	R 1100
1	185 RM	23,35	507	442	0,0991	1856	1000	R 1300
1	240 RM	26,15	604	509	0,0754	2406	1000	R 1400
1	300 RM	29,25	697	569	0,0601	2946	1000	R 1500
2	1,5 RE	10,15	24	31	12,1	140	1000	R 700
2	2,5 RE	10,95	32	40	7,41	173	1000	R 700
2	4 RE	11,85	42	52	4,61	218	1000	R 800
2	6 RE	12,85	53	64	3,08	275	1000	R 800
2	10 RM	15,35	74	86	1,83	411	1000	R 1000
2	16 RM	17,45	98	112	1,15	573	1000	R 1000
2	25 RM	20,85	133	145	0,727	848	1000	R 1100
2	35 RM	23,65	162	174	0,524	1131	1000	R 1300
3	1,5 RE	11,05	24	31	12,1	157	1000	R 700
3	2,5 RE	11,95	32	40	7,41	200	1000	R 800
3	4 RE	13,05	42	52	4,61	258	1000	R 800
3	6 RE	14,25	53	64	3,08	332	1000	R 900
3	10 RM	15,95	74	86	1,83	492	1000	R 1000
3	16 RM	18,05	98	112	1,15	695	1000	R 1000
3	25 RM	21,85	133	145	0,727	1048	1000	R 1200
3	35 RM	24,05	162	174	0,524	1362	1000	R 1300
3	50 RM	28,15	197	206	0,387	1850	1000	R 1500
3	70 RM	32,65	250	254	0,268	2613	1000	R 1600
3	95 RM	37,35	308	305	0,198	3540	500	R 1400
3	120 RM	40,55	359	348	0,153	4355	500	R 1500
3	150 RM	45,45	412	392	0,124	5402	500	R 1600
3	185 RM	51,15	475	444	0,0991	6805	500	R 1700
3	240 RM	57,55	564	517	0,0754	8808	250	R 1500
3	300 RM	64,15	649	585	0,0754	10790	250	R 1600
3	16+10 RM	20,15	98	112	1,15/1,83	835	1000	R 1100
3	25+16 RM	23,85	133	145	0,727/1,15	1236	1000	R 1300
3	35+16 RM	25,75	162	174	0,524/1,15	1540	1000	R 1400
3	50+25 RM	29,75	197	206	0,387/0,727	2089	1000	R 1500
3	70+35 RM	34,05	250	254	0,268/0,524	2910	1000	R 1700
3	95+50 RM	38,45	308	305	0,193/0,387	3894	500	R 1500
3	120+70 RM	42,85	359	348	0,153/0,268	4982	500	R 1500
3	150+70 RM	46,55	412	392	0,124/0,268	5913	500	R 1600
3	185+95 RM	52,95	475	444	0,0991/0,193	7594	500	R 1800
3	240+120 RM	58,95	564	517	0,754/0,153	9730	250	R 1500
4	1,5 RE	11,35	24	31	12,1	184	1000	R 700
4	2,5 RE	12,25	32	40	7,41	234	1000	R 800
4	4 RE	13,35	42	52	4,61	306	1000	R 900
4	6 RE	14,55	53	64	3,08	398	1000	R 900
4	10 RM	17,95	74	86	1,83	629	1000	R 1000
4	16 RM	20,25	98	112	1,15	888	1000	R 1100
4	25 RM	24,85	133	145	0,727	1359	1000	R 1400
4	35 RM	27,45	162	174	0,524	1775	1000	R 1500
4	50 RM	31,35	197	206	0,387	2347	1000	R 1500
4	70 RM	36,15	250	254	0,268	3299	1000	R 1700
4	95 RM	40,85	308	305	0,198	4425	500	R 1500
4	120 RM	44,45	359	348	0,153	5468	500	R 1500

Information Chart

Cu, Cl1-Cl2, 0,6/1 kV, 90 °C, Black, XLPE, PVC, PVC

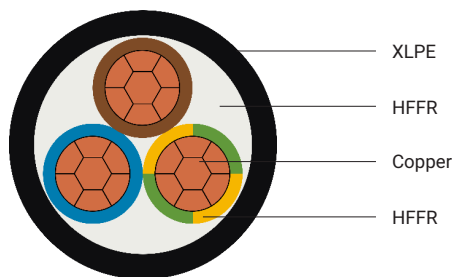
Conductor Count	Conductor Section	Outer Diameter	Current Capacity Air	Ground	Conductor Resistance at 20 °C	Net Weight	Amount of Packing	Packing Type
No.	mm ²	mm	A	A	ohm/km	kg/km	m	R: Reel, C: Coil
4	150 RM	49,55	412	392	0,124	6742	500	R 1700
4	185 RM	55,85	475	444	0,0991	8499	250	R 1500
4	240 RM	62,55	564	517	0,0754	10969	250	R 1600
4	300 RM	69,95	649	585	0,0601	13460	250	R 1700
5	1,5 RE	13,05	24	31	12,1	244	1000	R 800
5	2,5 RE	14,15	32	40	7,41	310	1000	R 900
5	4 RE	15,35	42	52	4,61	402	1000	R 900
5	6 RE	16,75	53	64	3,08	520	1000	R 1000
5	10 RM	19,85	74	86	1,83	779	1000	R 1100
5	16 RM	22,55	98	112	1,15	1108	1000	R 1200
5	25 RM	27,15	133	145	0,727	1662	1000	R 1500
5	35 RM	26,8	162	174	0,524	1640	1000	R 1400
5	50 RM	29,8	197	206	0,387	2160	1000	R 1500
5	70 RM	34,2	250	254	0,268	2872	1000	R 1600
5	95 RM	39,5	308	305	0,198	4049	500	R 1500
5	120 RM	44,7	359	348	0,153	5443	500,00	R 1500
5	150 RM	48,7	412	392	0,124	6738	500	R 1600
5	185 RM	54,3	475	444	0,0991	8309	250	R 1500
5	240 RM	61,4	564	517	0,0754	10503	250	R 1500

N2XH

Cu, Cl1-Cl2, 0,6/1 kV, 90 °C, Black, XLPE, HFFR, HFFR



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper RE: Class 1, RM: Class 2 RE: Class 1, RM: Class 2
Insulation	Material Marking	XLPE acc. to DIX-3 HD 308 S2 / VDE 0293-308
Filler	Material	HFFR
Outer Jacket	Material Color Diameter	HFFR acc. to HD 604 S1 Black See the table
Rating	Nominal Voltage Test Voltage Static Temperature Range Dynamic Temperature Range Bending Radius	0,6-1 kV 4 kV -15 °C up to +90 °C -5 °C up to +50 °C 12 x Diameter
Tests	Flame Retardant Halogen Free Low Smoke Droplet	IEC 60332-1-2, IEC 60332-3-24 Cat.C IEC 60754-1/2 IEC 61034-1/2 IEC 60332-1-3
Approvals	Certificates Available	TSE
Reference Standart	Main Alternative	TS HD 604 S1 VDE 0276 part 604
Available Related Products	With Additional Covers With Sectoral Shape Conductor	N2XRH, N2XFGBYH N2XBYH N2XCH N2XH (SM)

Application

Power cable suitable for fixed installation in dry and damp environment, on or under plaster, on cable trays, same as in walls and concrete. Not intended for direct laying in ground or water. For outdoor application can be laid in tubes, but in that case should be taken all precautionary measures necessary to prevent water penetration into the tubes. Suitable for supply systems in an emergency. Appropriate for application in all situations where people and material goods need to be protected in case of fire. Recommended for public buildings frequented by a lot of people, and for buildings of high material value, for industrial complexes, electric power plants, transformer stations, municipal facilities, hotels, shopping malls, hospitals, schools, airports, underground railways and similar.

Information Chart

Cu, Cl1-Cl2, 0,6/1 kV, 90 °C, Black, XLPE, HFFR, HFFR

Conductor Count	Conductor Section	Outer Diameter	Current Carrying Capacity		Conductor Resistance	Net Weight	Amount of Packing	Packing Type
No.	mm ²	mm	Air A	Ground A	ohm/km (20 °C)	kg/km	m	R: Reel, C: Coil
1	10 RM	7,70	77	89	1,83	132	1000	R 600
1	16 RM	8,70	102	115	1,15	190	1000	R 600
1	25 RM	10,40	138	148	0,727	285	1000	R 700
1	35 RM	11,45	170	177	0,524	376	1000	R 800
1	50 RM	12,97	207	209	0,387	496	1000	R 800
1	70 RM	14,89	263	256	0,268	703	1000	R 1000
1	95 RM	16,77	325	307	0,198	949	1000	R 1000
1	120 RM	18,22	380	349	0,153	1180	1000	R 1100
1	150 RM	20,25	437	393	0,124	1451	1000	R 1200
1	185 RM	22,80	507	445	0,0991	1826	1000	R 1300
1	240 RM	25,55	604	517	0,0754	2369	1000	R 1400
1	300 RM	28,47	697	663	0,0601	2893	1000	R 1500
2	1,5 RE	8,95	24	31	12,1	115	1000	R 700
2	2,5 RE	9,75	32	40	7,41	145	1000	R 700
2	4 RE	10,65	42	52	4,61	188	1000	R 700
2	6 RE	11,65	53	64	3,08	242	1000	R 800
2	10 RM	14,22	74	86	1,83	375	1000	R 1000
2	16 RM	16,30	98	112	1,15	532	1000	R 1000
2	25 RM	19,83	133	145	0,727	805	1000	R 1100
2	35 RM	22,02	162	174	0,524	1047	1000	R 1200
3	1,5 RE	9,39	24	31	12,1	131	1000	R 700
3	2,5 RE	10,25	32	40	7,41	170	1000	R 700
3	4 RE	11,23	42	52	4,61	226	1000	R 800
3	6 RE	12,31	53	64	3,08	296	1000	R 800
3	10 RM	15,51	74	86	1,83	481	1000	R 1000
3	16 RM	17,75	98	112	1,15	688	1000	R 1000
3	25 RM	21,57	133	145	0,727	1043	1000	R 1100
3	35 RM	23,93	162	174	0,524	1366	1000	R 1300
3	50 RM	27,30	197	206	0,387	1805	1000	R 1500
3	70 RM	31,77	250	254	0,268	2560	1000	R 1600
3	95 RM	35,92	308	305	0,198	3431	1000	R 1700
3	120 RM	39,06	359	348	0,153	4233	500	R 1500
3	150 RM	43,44	412	392	0,124	5210	500	R 1500
3	185 RM	48,95	475	444	0,0991	6569	500	R 1700
3	240 RM	54,90	564	517	0,0754	8480	250	R 1500
3	300 RM	61,19	649	585	0,0754	10386	250	R 1500
3	16+10 RM	18,81	98	112	1,15/1,83	776	1000	R 1100
3	25+16 RM	22,86	133	145	0,727/1,15	1187	1000	R 1300
3	35+16 RM	24,94	162	174	0,524/1,15	1499	1000	R 1400
3	50+25 RM	28,74	197	206	0,387/0,727	2028	1000	R 1500
3	70+35 RM	33,00	250	254	0,268/0,524	2838	1000	R 1600
3	95+50 RM	37,45	308	305	0,193/0,387	3821	1000	R 1800
3	120+70 RM	41,25	359	348	0,153/0,268	4840	500	R 1500
3	150+70 RM	44,93	412	392	0,124/0,268	5758	500	R 1500
3	185+95 RM	50,69	475	444	0,0991/0,193	7338	500	R 1700
3	240+120 RM	56,57	564	517	0,754/0,153	9429	250	R 1500
4	1,5 RE	10,10	24	31	12,1	154	1000	R 700
4	2,5 RE	11,07	32	40	7,41	203	1000	R 800
4	4 RE	12,16	42	52	4,61	272	1000	R 800
4	6 RE	13,40	53	64	3,08	362	1000	R 900
4	10 RM	16,92	74	86	1,83	590	1000	R 1000
4	16 RM	19,44	98	112	1,15	853	1000	R 1100
4	25 RM	23,88	133	145	0,727	1310	1000	R 1300
4	35 RM	26,78	162	174	0,524	1741	1000	R 1400
4	50 RM	30,55	197	206	0,387	2300	1000	R 1500
4	70 RM	35,21	250	254	0,268	3235	1000	R 1700
4	95 RM	39,74	308	305	0,198	4338	500	R 1500
4	120 RM	43,26	359	348	0,153	5367	500	R 1500
4	150 RM	48,17	412	392	0,124	6609	500	R 1700
4	185 RM	54,34	475	444	0,0991	8336	250	R 1500
4	240 RM	61,00	564	517	0,0754	10781	250	R 1500

N2XH

Cu, Cl1-Cl2, 0,6/1 kV, 90 °C, Black, XLPE, HFFR, HFFR

Information Chart

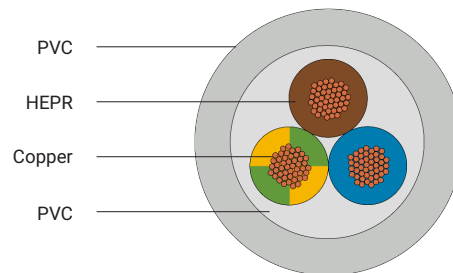
Conductor Count	Conductor Section	Outer Diameter	Current Carrying Capacity		Conductor Resistance	Net Weight	Amount of Packing	Packing Type
No.	mm ²	mm	Air A	Ground A	ohm/km (20 °C)	kg/km	m	R: Reel, C: Coil
5	1,5 RE	11,87	24	31	12,1	211	1000	R 800
5	2,5 RE	12,97	32	40	7,41	275	1000	R 800
5	4 RE	14,23	42	52	4,61	366	1000	R 900
5	6 RE	15,64	53	64	3,08	481	1000	R 1000
5	10 RM	18,76	74	86	1,83	734	1000	R 1100
5	16 RM	21,47	98	112	1,15	1056	1000	R 1100
5	25 RM	26,34	133	145	0,727	1620	1000	R 1400
5	35 RM	29,40	162	174	0,524	2143	1000	R 1500
5	50 RM	33,61	197	206	0,387	2839	1000	R 1600
5	70 RM	38,80	250	254	0,268	4002	1000	R 1800
5	95 RM	43,86	308	305	0,198	5377	500	R 1500
5	120 RM	47,79	359	348	0,153	6661	500	R 1600
5	150 RM	53,27	412	392	0,124	8210	500	R 1800
5	185 RM	60,14	475	444	0,0991	10364	250	R 1500
5	240 RM	67,59	564	517	0,0754	13417	250	R 1700



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FG70R

Cu, CI5, 0,6/1 kV, 90 °C, Grey, HEPR, PVC, PVC



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper See the table See the table
Insulation	Material Marking	HEPR acc. to G7 HD 308 S2
Filler	Material	PVC
Outer Jacket	Material Color Diameter	PVC acc. to Rz Grey See the table
Rating	Nominal Voltage Temperature Range Minimum Bending Radius	0,6-1 kV -15 °C up to +90 °C 4 x Diameter
Tests	Flame Propagation Fire Propagation Corrosive Gases or Halogens:	EN 60332-1-2 CEI 20-22 II EN 50267-2-1
Reference Standart	Main	CEI 20-13 - CEI UNEL 35375
Available Related Products	With Different Material	FG7R

Application

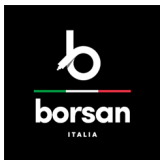
Suitable for the supply and transport of commands and/or signals in industry, construction sites, in housing. For use outdoor and indoor. For installation in brickwork, metal structures, gangways, pipes, ducts or similar closed systems. Allowed for underground laying also unprotected.

FG70R

Cu, Cl5, 0,6/1 kV, 90 °C, Grey, HEPR, PVC, PVC

Information Chart

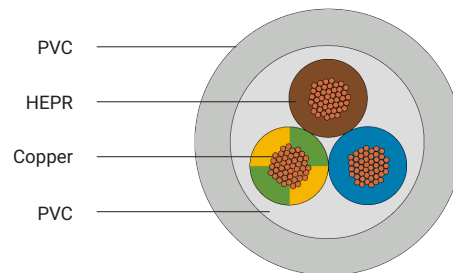
Conductor Count	Conductor Section	Outer Diameter	Wire Count	Wire Diameter	Conductor Resistance	Net Weight	Current Carrying Capacity	
No.	mm ²	mm	No.	mm	ohm/km (20 °C)	kg/km	Air A	Ground A
1	2,5	6,3	50	0,25	7,98	60	28	27
1	4	6,7	56	0,3	4,95	78	37	35
1	6	7,4	84	0,3	3,3	102	48	44
1	10	8,3	80	0,4	1,91	146	66	59
1	16	9,4	128	0,4	1,21	205	88	77
1	25	11,1	200	0,4	0,78	300	117	100
1	35	12,1	280	0,4	0,554	398	144	121
1	50	13,9	400	0,4	0,386	549	175	150
1	70	16,1	356	0,5	0,272	781	222	184
1	95	18	485	0,5	0,206	1010	269	217
1	120	19	614	0,5	0,161	1262	312	259
1	150	22,3	765	0,5	0,129	1600	355	287
1	185	23,6	944	0,5	0,106	1893	417	323
1	240	26,4	1225	0,5	0,0801	2429	490	379
1	300	31	1530	0,5	0,0641	3174	-	429
2	1,5	9,6	30	0,25	13,3	131	20	21
2	2,5	10,6	50	0,25	7,98	170	28	27
2	4	11,4	56	0,3	4,95	214	37	35
2	6	12,9	84	0,3	3,3	283	48	44
2	10	14,6	80	0,4	1,91	407	66	59
2	16	16,8	128	0,4	1,21	572	88	77
2	25	20,3	200	0,4	0,78	730	117	100
3	1,5	10	30	0,25	13,3	148	20	21
3	2,5	11,1	50	0,25	7,98	194	28	27
3	4	12	56	0,3	4,95	254	37	35
3	6	13,6	84	0,3	3,3	346	48	44
3	10	15,4	80	0,4	1,91	497	66	59
3	16	17,8	128	0,4	1,21	712	88	77
3	25	21,4	200	0,4	0,78	1062	117	100
3	35	25,1	280	0,4	0,554	1492	144	121
3	50	27,6	400	0,4	0,386	1970	175	150
3	70	32,6	356	0,5	0,272	2856	222	184
3	95	38,7	485	0,5	0,206	3905	269	217
3	120	41,1	614	0,5	0,161	4474	312	259
3	150	46	765	0,5	0,129	5400	355	287
4	1,5	11,4	30	0,25	13,3	178	20	21
4	2,5	12	50	0,25	7,98	231	28	27
4	4	13	56	0,3	4,95	308	37	35
4	6	14,6	84	0,3	3,3	418	48	44
4	10	16,8	80	0,4	1,91	618	66	59
4	16	19,4	128	0,4	1,21	886	88	77
4	25	23,6	200	0,4	0,78	1338	117	100
5	1,5	12,2	30	0,25	13,3	212	20	21
5	2,5	13	50	0,25	7,98	275	28	27
5	4	14,1	56	0,3	4,95	370	37	35
5	6	16	84	0,3	3,3	515	48	44
5	10	18,7	80	0,4	1,91	770	66	59
5	16	21,5	128	0,4	1,21	1102	88	77
5	25	26,1	200	0,4	0,78	1658	117	100
5	35	29,6	280	0,4	0,554	2269	144	121
5	50	34,5	400	0,4	0,386	3042	175	150
7	1,5	12,6	30	0,25	13,3	241	20	21
10	1,5	15	30	0,25	13,3	343	20	21
12	1,5	16,2	30	0,25	13,3	402	20	21



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FG16OR16

Cu, CI5, 0,6/1 kV, 90 °C, Grey, HEPR, PVC, PVC



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper See the table See the table
Insulation	Material Marking	HEPR acc. to G16 HD 308 S2
Filler	Material	PVC
Outer Jacket	Material Color Diameter	PVC acc. to R16 quality Grey See the table
Rating	Nominal Voltage Temperature Range Minimum Bending Radius	0,6-1 kV -15 °C up to +90 °C 4 x Diameter
Tests	Flame Propagation	EN 60332-1-2
Reference Standart	Main	CEI 20-13 - CEI UNEL 35318
Available Related Products	With Different Material	FG16R16

Application

Cable suitable for energy supply in industry, building sites and construction industry. For fixed wiring indoors and outdoors, even wet; for direct and indirect underground wiring. Suitable for installation at open air, on walls, metal structures, cable trays, pipes, wiring holders and similar devices. Suitable for bundle installations in environments at risk of fire.

FG16OR16

Cu, CI5, 0,6/1 kV, 90 °C, Grey, HEPR, PVC, PVC

Information Chart

Conductor Count	Conductor Section	Outer Diameter	Wire Count	Wire Diameter	Conductor Resistance	Net Weight	Current Carrying Capacity	
No.	mm ²	mm	No.	mm	ohm/km (20 °C)	kg/km	Air A	Ground A
1	50	16,4	399	0,38	0,386	556	175	150
1	70	17,3	592	0,37	0,272	761	222	184
1	95	20,4	740	0,38	0,206	991	269	217
1	120	22,4	962	0,38	0,161	1219	312	259
1	150	24,8	1184	0,38	0,129	1517	355	287
1	185	27,2	1443	0,38	0,106	1821	417	323
2	1,5	12	27	0,25	13,3	125	22	23
2	2,5	13	45	0,25	7,98	151	30	30
2	4	14,2	50	0,3	4,95	207	40	39
2	6	15,4	75	0,3	3,3	256	51	49
2	10	17,3	84	0,37	1,91	395	66	69
2	16	19,4	133	0,37	1,21	576	91	86
2	25	23	196	0,38	0,78	806	119	111
3	1,5	12,5	27	0,25	13,3	139	19,5	19
3	2,5	13,6	45	0,25	7,98	185	26	25
3	4	14,9	50	0,3	4,95	246	35	32
3	6	16,2	75	0,3	3,3	313	44	41
3	10	18,2	84	0,37	1,91	503	60	55
3	16	20,6	133	0,37	1,21	609	80	72
3	25	24,5	196	0,38	0,78	991	105	93
3	35	27,3	280	0,38	0,554	1370	128	114
3	50	31,2	399	0,38	0,386	1941	154	141
3	70	35,6	592	0,37	0,272	2680	194	174
3	95	40,4	740	0,38	0,206	3487	233	206
3	120	44,4	962	0,38	0,161	4406	268	238
3	150	49,5	1184	0,38	0,129	5440	300	272
3	185	55,2	1443	0,38	0,106	6750	340	306
3	240	61,9	1924	0,38	0,0801	8778	398	360
4	2,5	14,6	45	0,25	7,98	222	26	25
4	4	16	50	0,3	4,95	297	35	32
4	6	17,5	75	0,3	3,3	392	44	41
4	25	26,8	196	0,38	0,78	1255	105	93
5	1,5	14,4	27	0,25	13,3	204	14	19
5	2,5	15,6	45	0,25	7,98	266	26	21
5	4	17,3	50	0,3	4,95	361	35	32
5	6	18,9	75	0,3	3,3	471	44	41
5	10	21,5	84	0,37	1,91	756	60	55
5	16	24,4	133	0,37	1,21	1119	80	72
5	25	29,3	196	0,38	0,78	1597	105	93
5	35	32,8	280	0,38	0,554	2140	130	114
5	50	38,2	399	0,38	0,386	3004	155	141
5	70	44,6	592	0,37	0,272	4466	194	174
12	1,5	19,3	27	0,25	13,3	380	9,5	12,5
16	1,5	21,1	27	0,25	13,3	549	9,5	19



Low voltage aluminium conductor power cables

A bare wire of aluminum weighs half as much as a bare wire of copper that has the same electrical resistance. Aluminum is generally more inexpensive when compared to copper conductors. Therefore, aluminum cable can be a better solution if there is no size limitation.

Residential buildings, power distribution networks, lighting systems, industrial buildings and power plants are the main usage areas. They may be used in direct current between 50 V and 1000 V, alternating current between 75 V and 1500 V.

Our products have several country approvals and CPR, DOP documents.

Cables can be modified for special requirements such as extra UV protection, underground protection with galvanized steel armor or special customer requests.

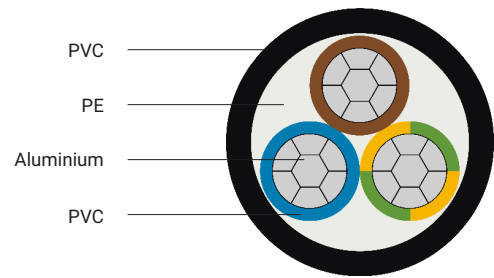
Borsan melts its own aluminium for wiring with 2 reverber furnaces. This ensures highest quality for conductivity.



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NAYY

Al, Cl1-Cl2, 0,6/1 kV, 70 °C, Black, PVC, PE, PVC



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Aluminium Class 1, Class 2 Class 1, Class 2
Insulation	Material Marking	PVC acc. to DIV-4 HRN HD 308 S2 / VDE 0293-308
Filler	Material	PE
Outer Jacket	Material Color Diameter	PVC Black See the table
Rating	Nominal Voltage Test Voltage Static Temperature Range Dynamic Temperature Range Bending Radius	0,6-1 kV 4 kV -30 °C up to +70 °C -5 °C up to +50 °C 12 x Diameter
Tests	Flame Retardant	IEC 60332-1
Approvals	Certificates Available	TSE, CPR, DOP
Reference Standart	Main Alternative	TS IEC 60502-1 VDE 0276 part 603
Available Related Products	With Additional Covers With Sectoral Shape Conductor	NAYRY, NAYFGBY, NAYBY, NAYCY NAYY (SM)

Application

Power cables for energy supply are installed in open air, in underground, in water, in concrete, indoors, in cable ducts, power stations, for industry and distribution boards as well as in subscriber networks, where mechanical damages are not be expected.

Conductor Count	Conductor Section	Outer Diameter	Current Carrying Capacity		Conductor Resistance	Net Weight	Amount of Packing	Packing Type
No.	mm ²	mm	Air A	Ground A	ohm/km (20 °C)	kg/km	m	R: Reel, C: Coil
1	16	9,6	–	–	1.910	115	1000	R 700
1	25	11,5	87	106	1.200	160	1000	R 700
1	35	12,5	107	127	0,868	200	1000	R 800
1	50	14,5	131	151	0,641	280	1000	R 900
1	70	16	166	185	0,443	350	1000	R 1000
1	95	18	205	222	0,32	450	1000	R 1100
1	120	20	239	253	0,253	550	1000	R 1100
1	150	22	273	284	0,206	700	1000	R 1200
1	185	24	317	322	0,164	800	1000	R 1300
1	240	27	378	375	0,125	1050	1000	R 1400
1	300	30	437	425	0,1	1300	1000	R 1500
1	400	34	513	487	0,078	1700	1000	R 1600
1	500	37,5	600	558	0,061	2050	1000	R 1700
2	16	18,7	–	–	1.910	480	1000	R 1100
2	25	22,5	82	102	1.200	650	1000	R 1200
2	35	25	100	123	0,868	800	1000	R 1300
2	50	28,5	119	144	0,641	1100	1000	R 1400
2	70	32	152	179	0,443	1400	1000	R 1500
2	95	36,5	186	215	0,32	1850	1000	R 1600
2	120	40	216	245	0,253	2200	1000	R 1800
2	150	44	246	275	0,206	2650	1000	R 2000
2	185	49	285	313	0,164	3300	1000	R 2100
3	16	19,7	–	–	1.910	545	1000	R 1100
3	25	24	82	102	1.200	760	1000	R 1300
3	35	26,5	100	123	0,868	930	1000	R 1300
3	50	30,5	119	144	0,641	1250	1000	R 1400
3	70	34,5	152	179	0,443	1650	1000	R 1500
3	95	39,5	186	215	0,32	2150	1000	R 1800
3	120	43	216	245	0,253	2550	1000	R 2000
3	150	48	246	275	0,206	3200	1000	R 2100
3	185	52,5	285	313	0,164	3900	1000	R 2200
3	240	59,5	338	364	0,125	4950	500	R 1900
3	300	65,5	400	419	0,1	6050	500	R 2000
3	400	74	472	484	0,078	7850	500	R 2200
3	16+10	21	–	–	1,910/3,080	590	1000	R 1200
3	25+16	25	82	102	1,200/1,910	850	1000	R 1300
3	35+16	27	100	123	0,868/1,910	1000	1000	R 1400
3	50+25	32	119	144	0,641/1,200	1350	1000	R 1500
3	70+35	36	152	179	0,443/0,868	1800	1000	R 1600
3	95+50	41	186	215	0,320/0,641	2350	1000	R 1800
3	120+70	45,5	216	245	0,253/0,443	2900	1000	R 2000
3	150+70	49,5	246	275	0,206/0,443	3450	1000	R 2100
3	185+95	55	285	313	0,164/0,320	4250	500	R 1800
3	240+120	61,5	338	364	0,125/0,253	5350	500	R 2000
3	300+150	68	400	419	0,100/ 0,206	6550	500	R 2100
3	400+185	76,5	472	484	0,0778/0,164	8400	500	R 2200
4	16	21	–	–	1,91	625	1000	R 1200
4	25	26	82	102	1,2	900	1000	R 1300
4	35	29	100	123	0,868	1150	1000	R 1400
4	50	34	119	144	0,641	1600	1000	R 1500
4	70	38,5	152	179	0,443	2050	1000	R 1700
4	95	43,5	186	215	0,32	2650	1000	R 2000
4	120	48	216	245	0,253	3200	1000	R 2100
4	150	53	246	275	0,206	3950	1000	R 2200
4	185	59	285	313	0,164	4900	500	R 1900
4	240	66	338	364	0,125	6150	500	R 2000
4	300	72,5	400	419	0,1	7500	500	R 2300
4	400	82,5	472	484	0,078	9750	500	R 2400
5	16	23,1	–	–	1,91	660	1000	R 1200
5	25	27,5	82	102	1,2	940	1000	R 1400

Information Chart

Al, Cl1-Cl2, 0,6/1 kV, 70 °C, Black, PVC, PE, PVC

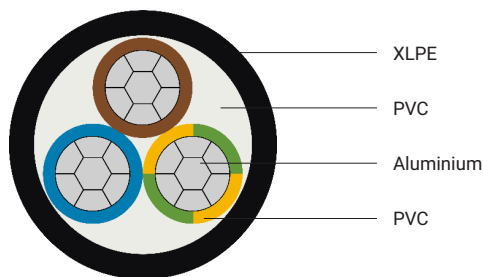
Conductor Count	Conductor Section	Outer Diameter	Current Carrying Capacity		Conductor Resistance	Net Weight	Amount of Packing	Packing Type
No.	mm ²	mm	Air A	Ground A	ohm/km (20 °C)	kg/km	m	R: Reel, C: Coil
5	35	30,8	100	123	0,868	1190	1000	R 1500
5	50	35,6	119	144	0,641	1580	1000	R 1600
5	70	40,6	152	179	0,443	2090	1000	R 1800
5	95	46,8	186	215	0,32	2810	1000	R 2000
5	120	51,5	216	245	0,253	3440	500	R 1600
5	150	56,6	246	275	0,206	4170	500	R 1900
5	185	62,2	285	313	0,164	5010	500	R 2000
5	240	71	338	364	0,125	6540	250	R 1700
5	300	77,9	400	419	0,1	7920	250	R 1800

NA2XY

AI, CI1-CI2, 0,6/1 kV, 90 °C, Black, XLPE, PVC, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Aluminium Class 1, Class 2 Class 1, Class 2
Insulation	Material Marking	XLPE acc. to DIX-3 HD 604 S1
Filler	Material	PVC
Outer Jacket	Material Color Diameter	PVC DMV-6 Black See the table
Rating	Nominal Voltage Test Voltage Static Temperature Range Dynamic Temperature Range Bending Radius	0,6-1 kV 4 kV -20 °C up to +70 °C -5 °C up to +50 °C 12 x Diameter
Tests	Flame Retardant	IEC 60332-1
Approvals	Certificates Available	SII
Reference Standart	Main Alternative	TS IEC 60502-1 VDE 0276-603
Available Related Products	With Additional Covers With Sectoral Shape Conductor	NA2XRY, NA2XFGBY, NA2XBY, NA2XCY NA2XY (SM)

Application

Power cables for energy supply are installed in open air, in underground, in water, in concrete, indoors, in cable ducts, power stations, for industry and distribution boards as well as in subscriber networks, where mechanical damages are not be expected.

Information Chart

Al, Cl1-Cl2, 0,6/1 kV, 90 °C, Black, XLPE, PVC, PVC

Conductor Count	Conductor Section	Outer Diameter	Current Carrying Capacity		Conductor Resistance	Net Weight	Amount of Packing	Packing Type
No.	mm ²	mm	Air A	Ground A	ohm/km (20 °C)	kg/km	m	R: Reel, C: Coil
1	16	8,9	–	–	1.910	95	1000	R 600
1	25	10,5	106	114	1.200	150	1000	R 700
1	35	12	130	136	0,868	180	1000	R 800
1	50	13,5	161	162	0,641	250	1000	R 900
1	70	15,5	204	199	0,443	300	1000	R 900
1	95	17	252	238	0,32	400	1000	R 1000
1	120	19	295	272	0,253	500	1000	R 1100
1	150	21	339	305	0,206	600	1000	R 1200
1	185	23	395	347	0,164	750	1000	R 1200
1	240	26	472	404	0,125	950	1000	R 1300
1	300	25,5	547	457	0,1	1150	1000	R 1300
1	400	36	643	525	0,078	1850	1000	R 1600
1	500	35,5	754	601	0,061	1820	1000	R 1600
2	16	17,5	–	–	1.910	400	1000	R 1000
2	25	21,5	102	112	1.200	600	1000	R 1200
2	35	23,3	126	135	0,868	700	1000	R 1200
2	50	25,8	149	158	0,641	900	1000	R 1300
2	70	29,7	191	196	0,443	1200	1000	R 1400
2	95	33,9	234	234	0,32	1550	1000	R 1500
3	16	18,5	–	–	1.910	440	1000	R 1100
3	25	22,5	102	112	1.200	650	1000	R 1200
3	35	25	126	135	0,868	800	1000	R 1300
3	50	28,5	149	158	0,641	1100	1000	R 1400
3	70	33	191	196	0,443	1500	1000	R 1500
3	95	37	234	234	0,32	1850	1000	R 1600
3	120	41	273	268	0,253	2300	1000	R 1800
3	150	46	311	300	0,206	2900	1000	R 2000
3	185	50,5	360	342	0,164	3500	1000	R 2200
3	240	57	427	398	0,125	4450	1000	R 2400
3	300	62,5	507	457	0,1	5450	500	R 2000
3	400	71	600	529	0,078	7100	500	R 2200
3	16+10	19,6	–	–	1,910/3,080	500	1000	R 1200
3	25+16	23,5	102	112	1,200/1,910	750	1000	R 1200
3	35+16	25,5	126	135	0,868/1,910	850	1000	R 1300
3	50+25	30	149	158	0,641/1,200	1200	1000	R 1400
3	70+35	34,5	191	196	0,443/0,868	1600	1000	R 1500
3	95+50	39	234	234	0,320/0,641	2050	1000	R 1700
3	120+70	43	273	268	0,253/0,443	2550	1000	R 1900
3	150+70	47,5	311	300	0,206/0,443	3100	1000	R 2100
3	185+95	52,5	360	342	0,164/0,320	3800	1000	R 2300
3	240+120	59	427	398	0,125/0,253	4800	500	R 1900
3	300+150	65	507	457	0,100/ 0,206	5900	500	R 2000
3	400+185	73,5	600	529	0,0778/0,164	7550	500	R 2300
4	16	21	–	–	1,91	610	1000	R 1200
4	25	24,5	102	112	1,2	800	1000	R 1200
4	35	27,5	126	135	0,868	1000	1000	R 1300
4	50	31,5	149	158	0,641	1350	1000	R 1400
4	70	36,5	191	196	0,443	1800	1000	R 1600
4	95	41	234	234	0,32	2300	1000	R 1800
4	120	46	273	268	0,253	2900	1000	R 2000
4	150	51	311	300	0,206	3550	1000	R 2200
4	185	56,5	360	342	0,164	4350	1000	R 2400
4	240	63	427	398	0,125	5550	500	R 2000
4	300	69,5	507	457	0,1	6750	500	R 2200
4	400	79,5	600	529	0,078	8900	500	R 2400
5	16	22,1	–	–	1,91	580	1000	R 1200
5	25	26,4	102	112	1,2	820	1000	R 1400
5	35	29,3	126	135	0,868	1020	1000	R 1500
5	50	33,8	149	158	0,641	1360	1000	R 1500
5	70	38,9	191	196	0,443	1830	1000	R 1800

NA2XY

Al, Cl1-Cl2, 0,6/1 kV, 90 °C, Black, XLPE, PVC, PVC

Information Chart

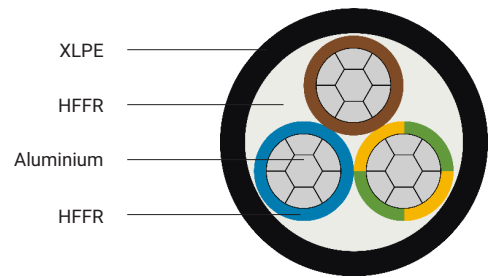
Conductor Count	Conductor Section	Outer Diameter	Current Carrying Capacity		Conductor Resistance	Net Weight	Amount of Packing	Packing Type
No.	mm ²	mm	Air A	Ground A	ohm/km (20 °C)	kg/km	m	R: Reel, C: Coil
5	95	44,3	234	234	0,32	2440	1000	R 1900
5	120	49,2	273	268	0,253	3000	1000	R 2100
5	150	54,5	311	300	0,206	3700	500	R 1800
5	185	60,6	360	342	0,164	4540	500	R 2000
5	240	68,1	427	398	0,125	5760	250	R 1600
5	300	75,2	507	457	0,1	7080	250	R 1700



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NA2XH

Al, Cl1-Cl2, 0,6/1 kV, 90 °C, Black, XLPE, HFFR, HFFR



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Aluminium Class 1, Class 2 Class 1, Class 2
Insulation	Material Marking	XLPE acc. to DIX-3 HD 604 S1/VDE 0293-308
Filler	Material	HFFR
Outer Jacket	Material Color Diameter	HFFR acc. to HD 604 S1 Black See the table
Rating	Nominal Voltage Test Voltage Static Temperature Range Dynamic Temperature Range Bending Radius	0,6-1 kV 4 kV -30 °C up to +90 °C -5 °C up to +50 °C 12 x Diameter
Tests	Flame Retardant Halogen Free Low Smoke Droplet	IEC 60332-3-24 IEC 60754-1 IEC 61034-1-2 IEC 60754-2
Approvals	Certificates Available	CPR, DOP
Reference Standart	Main	TS HD 604 S1
Available Related Products	With Additional Covers With Sectoral Shape Conductor	NA2XRH, NA2XFBH NA2XBH, NA2XCH NA2XH (SM)

Application

Halogen-free power cables for energy with enhanced characteristics in case of fire are used for applications where harm to human life and damage to property must be prevented in the event of fire, e. g. in power stations, industrial installations, communal establishments, hotels, airports, underground stations, railway stations, hospitals department stores, banks, schools theaters, multi-storey buildings, process control centres etc. Suitable for fixed installation in dry, damp or wet environments, in, above, on and beneath plaster as well as in masonry walls and in concrete. These cables are suitable for outdoor applications and in underground by using in conduits or tubes. For the installation in conduit all precautions must be taken that no accumulation of water can occur in the pipes.

NA2XH

Al, Cl1-Cl2, 0,6/1 kV, 90 °C, Black, XLPE, HFFR, HFFR

Information Chart

Conductor Count	Conductor Section	Outer Diameter	Current Carrying Capacity		Conductor Resistance	Net Weight	Amount of Packing	Packing Type
No.	mm ²	mm	Air A	Ground A	ohm/km (20 °C)	kg/km	m	R: Reel, C: Coil
1	16	8,9	-	-	1.910	93	1000	R 600
1	25	10,5	106	114	1.200	147	1000	R 700
1	35	12	130	136	0,868	175	1000	R 800
1	50	13,5	161	162	0,641	245	1000	R 900
1	70	15,5	204	199	0,443	290	1000	R 900
1	95	16	252	238	0,32	400	1000	R 1000
1	120	16,6	295	272	0,253	490	1000	R 1100
1	150	20,4	339	305	0,206	580	1000	R 1200
1	185	22,6	395	347	0,164	720	1000	R 1200
1	240	25,4	472	404	0,125	900	1000	R 1300
1	300	25	547	457	0,1	1090	1000	R 1300
1	400	35,2	643	525	0,078	1450	1000	R 1600
1	500	34,7	754	601	0,061	1780	1000	R 1600
2	16	17,5	-	-	1.910	395	1000	R 1000
2	25	21,3	102	112	1.200	590	1000	R 1200
2	35	23	126	135	0,868	675	1000	R 1200
2	50	25,2	149	158	0,641	880	1000	R 1300
2	70	29	191	196	0,443	1170	1000	R 1400
2	95	33,5	234	234	0,32	1500	1000	R 1500
3	16	18,5	-	-	1.910	435	1000	R 1100
3	25	22,5	102	112	1.200	640	1000	R 1200
3	35	24,7	126	135	0,868	775	1000	R 1300
3	50	28	149	158	0,641	1060	1000	R 1400
3	70	32,5	191	196	0,443	1460	1000	R 1500
3	95	36	234	234	0,32	1790	1000	R 1600
3	120	40	273	268	0,253	2250	1000	R 1800
3	150	45	311	300	0,206	2700	1000	R 2000
3	185	49	360	342	0,164	3350	1000	R 2200
3	240	55,5	427	398	0,125	4250	1000	R 2400
3	300	60	507	457	0,1	5200	500	R 2000
3	400	67	600	529	0,078	6800	500	R 2200
3	16+10	19,5	-	-	1.910/3.080	485	1000	R 1200
3	25+16	23	102	112	1.200/1.910	730	1000	R 1200
3	35+16	25	126	135	0.868/1.910	820	1000	R 1300
3	50+25	29,5	149	158	0.641/1.200	1170	1000	R 1400
3	70+35	34	191	196	0.443/0.868	1540	1000	R 1500
3	95+50	38,5	234	234	0.320/0.641	1980	1000	R 1700
3	120+70	42	273	268	0.253/0.443	2470	1000	R 1900
3	150+70	47	311	300	0.206/0.443	2940	1000	R 2100
3	185+95	52	360	342	0.164/0.320	3650	1000	R 2300
3	240+120	57,6	427	398	0.125/0.253	4500	500	R 1900
3	300+150	62,5	507	457	0.100/ 0.206	5600	500	R 2000
3	400+185	72	600	529	0.0778/0.164	7300	500	R 2300
4	16	21	-	-	1,91	600	1000	R 1200
4	25	24,5	102	112	1,2	770	1000	R 1200
4	35	27	126	135	0,868	920	1000	R 1300
4	50	31	149	158	0,641	1300	1000	R 1400
4	70	35,8	191	196	0,443	1700	1000	R 1600
4	95	40	234	234	0,32	2150	1000	R 1800
4	120	45,5	273	268	0,253	2700	1000	R 2000
4	150	49,5	311	300	0,206	3380	1000	R 2200
4	185	55	360	342	0,164	4050	1000	R 2400
4	240	61,5	427	398	0,125	5280	500	R 2000
4	300	68	507	457	0,1	6500	500	R 2200
5	16	21,2	-	-	1,91	530	1000	R 1200
5	25	25,7	102	112	1,2	770	1000	R 1300
5	35	28,5	126	135	0,868	970	1000	R 1500
5	50	32,9	149	158	0,641	1290	1000	R 1500
5	70	37,9	191	196	0,443	1740	1000	R 1700
5	95	43,1	234	234	0,32	2320	1000	R 1900



Single core electrical appliance cables

Internal wiring of electrical appliances, installations in conduit pipes under or over plaster are the main usage areas. They may be used in direct current between 50 V and 450V, alternating current between 75 V and 750 V. They may be suited for fixed or flexible application depending on the wire count. Different temperature ratings and halogen-free materials are available.

Our products have several country approvals and CPR, DOP documents.

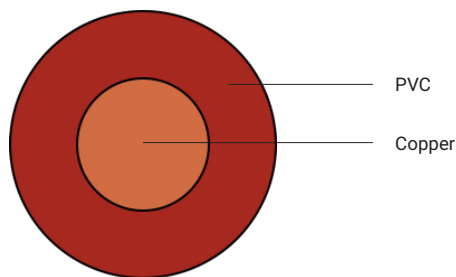
Cables can be modified according to special customer requests.

H05V-U / H07V-U

Cu, Cl1, 300/500 V - 450/750 V, 70 °C, Any Color, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 1 Class 1
Insulation	Material Marking Nominal Thickness Outer Diameter	PVC, 70°C acc. to T11 Optional See the table See the table
Rating	Nominal Voltage Nominal Voltage Temperature Range Test Voltage	300/500 V for H05V-U 450/750 V for H07V-U +70 °C 2 kV
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Available Certificates	HAR, CPR
Reference Standart	Main	TS EN 50525-2-31

Application

For internal wiring of switching boxes and other electrical appliances. For installation in closed conduits and pipes. Not for direct installation under plaster.

Information Chart

Cu, ClI, 300/500 V - 450/750 V, 70 °C, Any Color, PVC

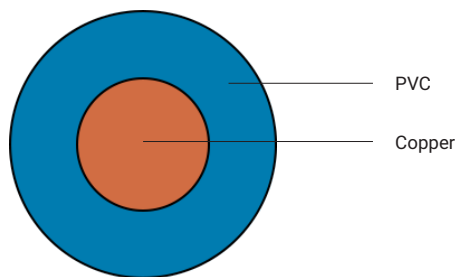
Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	A	ohm/km	kg/km	m	R:Reel C:Coil
1	0,5	2	9	36	8,25	100	C 100
1	0,75	2,15	15	24,5	10,65	100	C 100
1	1	2,3	19	18,1	13,26	100	C 100
1	1,5	2,7	24	12,1	19,45	100	C 100
1	2,5	3,3	32	7,41	30,45	100	C 100
1	4	3,75	42	4,61	44,65	100	C 100
1	6	4,25	54	3,08	63,2	100	C 100
1	10	5,45	73	1,83	104,7	100	C 100

H05V2-U / H07V2-U

Cu, Cl1, 300/500 V-450/750 V, 90 °C, Any Color, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 1 Class 1
Insulation	Material Marking Outer Diameter	PVC, 90°C acc. to TI3 Optional See the table
Rating	Nominal Voltage Nominal Voltage Temperature Range	300/500 V for H05V2-U 450/750 V for H07V2-U +90 °C
Tests	Flame Retardant	IEC 60332-1-2
Reference Standart	Main	TS EN 50525-2-31

Application

Suitable for installations inside lighting devices, in which the max. conductor temperature under normal usage conditions does not exceed 90°C. Installation permitted in aboveground or built-in pipes if used for signalling and control circuits only. Contact with water is not permitted.

Information Chart

Cu, Cl1, 300/500 V - 450/750 V, 90 °C, Any Color, PVC

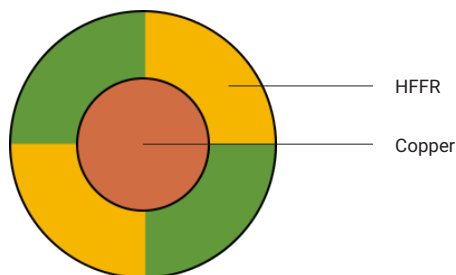
Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	A	ohm/km	kg/km	m	R:Reel C:Coil
1	0,5	2	9	36	8,25	100	C 100
1	0,75	2,15	15	24,5	10,65	100	C 100
1	1	2,3	19	18,1	13,26	100	C 100
1	1,5	2,75	24	12,1	19,45	100	C 100
1	2,5	3,35	32	7,41	30,45	100	C 100
1	4	3,8	42	4,61	44,65	100	C 100
1	6	4,3	54	3,08	63,2	100	C 100
1	10	5,45	73	1,83	104,7	100	C 100

H05Z1-U / H07Z1-U

Cu, Cl1, 300/500 V - 450/750 V, 70 °C, Any Color, HFFR



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 1 Class 1
Insulation	Material Marking Outer Diameter	HFFR, 70°C acc. to TI7 Optional See the table
Rating	Nominal Voltage Nominal Voltage Temperature Range	300/500 V for H05Z1-U 450/750 V for H07Z1-U +70 °C
Tests	Flame Retardant Halogen Free Low Smoke	IEC 60332-1-2 IEC 60754-1/2 IEC 61034-1/2
Approvals	Certificates Available	HAR
Reference Standart	Main	TS EN 50525-3-31

Application

For internal wiring of appliances as well as installation in an electrical conduit pipe either on or underneath plaster, especially for applications that require minor release of smoke or corrosive gases in the event of fire.

Information Chart

Cu, Cl1, 300/500 V - 450/750 V, 70 °C, Any Color, HFFR

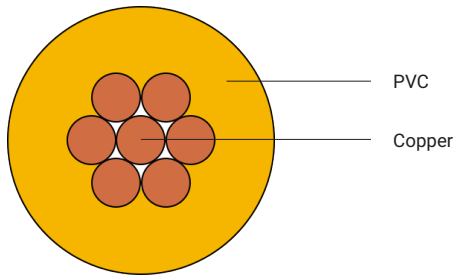
Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	A	ohm/km	kg/km	m	R:Reel C:Coil
1	0,5	2	9	36	8,25	100	C 100
1	0,75	2,15	15	24,5	10,65	100	C 100
1	1	2,3	19	18,1	13,26	100	C 100
1	1,5	2,75	24	12,1	19,45	100	C 100
1	2,5	3,35	32	7,41	30,45	100	C 100
1	4	3,8	42	4,61	44,65	100	C 100
1	6	4,3	54	3,08	63,2	100	C 100
1	10	5,45	73	1,83	104,7	100	C 100

H07V-R

Cu, Cl2, 450/750 V, 70 °C, Any Color, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 2 Class 2
Insulation	Material Marking Outer Diameter	PVC, 70°C acc. to T11 Optional See the table
Rating	Nominal Voltage Temperature Range Installation Temperature Short Circuit Temperature Test Voltage	450/750 V +70 °C +5 °C +160 °C 2 - 2,5 kV
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	HAR, CPR
Reference Standart	Main	TS EN 50525-2-31

Application

For laying in pipes on top of or under plaster and in closed installation ducts and for internal wiring of machinery, switch-gear and distributor systems. The cable is not suitable for direct laying under plaster.

Information Chart

Cu, Cl1, 300/500 V - 450/750 V, 70 °C, Any Color, PVC

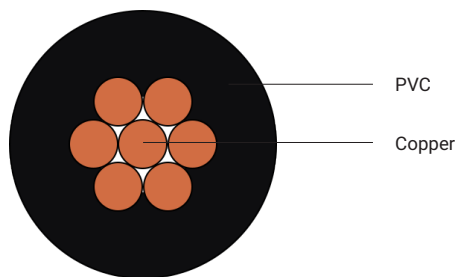
Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	A	ohm/km	kg/km	m	R:Reel C:Coil
1	2,5	3,6	32	7,41	32,1	100	C 100
1	4	4,1	42	4,61	46,45	100	C 100
1	6	4,65	54	3,08	64,9	100	C 100
1	10	5,9	73	1,83	109,1	100	C 100
1	16	6,85	98	1,15	163,5	100	C 100
1	25	8,6	129	0,727	253,9	100	C 100
1	35	9,8	158	0,524	343,1	1000	R 700
1	50	11,2	197	0,387	463,8	1000	R 800
1	70	13,1	245	0,268	660,6	1000	R 800
1	95	15,3	290	0,193	912,9	1000	R 1000
1	120	16,6	345	0,153	1132	1000	R 1000
1	150	18,5	390	0,124	1400	1000	R 1100
1	185	21,05	445	0,0991	1771	1000	R 1200
1	240	23,9	525	0,0754	2315	1000	R 1300
1	300	27,5	605	0,0601	2858	1000	R 1400

H07V2-R

Cu, Cl2, 450/750 V, 90 °C, Any Color, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 2 Class 2
Insulation	Material Marking Outer Diameter	PVC, 90°C acc. to T13 Optional See the table
Rating	Nominal Voltage Temperature Range Installation Temperature Short Circuit Temperature Test Voltage	450/750 V +90 °C +5 °C +160 °C 2 - 2,5 kV
Tests	Flame Retardant	IEC 60332-1-2
Reference Standart	Main	TS EN 50525-2-31

Application

Suitable for installations in aboveground or built-in pipes or similar closed systems, in which the max. conductor temperature under normal usage conditions does not exceed 90°C. If installed in supply systems, the max. continuous operating temperature has to be 70°C. For fixed and protected installations in lighting and control devices, rated voltages up to 1000 V in AC or up to 750 V in DC landward are permitted. Contact with water is not permitted.

Information Chart

Cu, Cl2, 450/750 V, 90 °C, Any Color, PVC

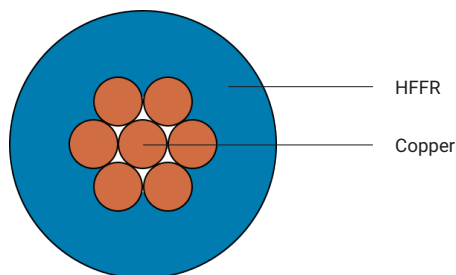
Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	A	ohm/km	kg/km	m	R:Reel C:Coil
1	1,5	2,95	24	12,1	20,3	100	C 100
1	2,5	3,6	32	7,41	32,1	100	C 100
1	4	4,1	42	4,61	46,45	100	C 100
1	6	4,65	54	3,08	64,9	100	C 100
1	10	5,9	73	1,83	109,1	100	C 100
1	16	6,85	98	1,15	163,5	100	C 100
1	25	8,45	129	0,727	253,9	100	C 100
1	35	9,55	158	0,524	343,1	1000	R 700
1	50	11,2	197	0,387	463,8	1000	R 800
1	70	12,9	245	0,268	660,6	1000	R 800
1	95	15,1	290	0,193	912,9	1000	R 1000
1	120	16,25	345	0,153	1132	1000	R 1000
1	150	18,2	390	0,124	1400	1000	R 1100
1	185	20,65	445	0,0991	1771	1000	R 1200
1	240	23,45	525	0,0754	2315	1000	R 1300
1	300	26,5	605	0,0601	2858	1000	R 1400

H07Z1-R

Cu, Cl2, 450/750 V, 70 °C, Any Color, HFFR



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 2 Class 2
Insulation	Material Marking Outer Diameter	HFFR, 70°C acc. to TI7 Optional See the table
Rating	Nominal Voltage Temperature Range Installation Temperature Short Circuit Temperature Test Voltage	450/750 V +70 °C +5 °C +160 °C 2 - 2,5 kV
Tests	Flame Retardant Halogen Free Low Smoke	IEC 60332-1-2 IEC 60754-1/2 IEC 61034-1/2
Approvals	Certificates Available	HAR
Reference Standart	Main	TS EN 50525-3-31

Application

For internal wiring of appliances as well as installation in an electrical conduit pipe either on or underneath plaster, especially for applications that require minor release of smoke or corrosive gases in the event of fire.

Information Chart

Cu, Cl2, 450/750 V, 70 °C, Any Color, HFFR

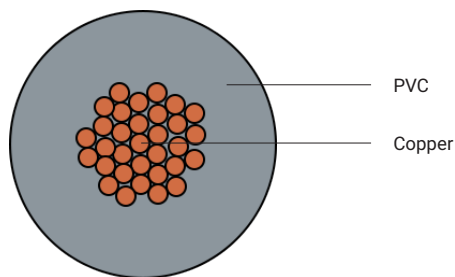
Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	A	ohm/km	kg/km	m	R:Reel C:Coil
1	1,5	2,95	24	12,1	20,3	100	C 100
1	2,5	3,6	32	7,41	32,1	100	C 100
1	4	4,1	42	4,61	46,45	100	C 100
1	6	4,65	54	3,08	64,9	100	C 100
1	10	5,9	73	1,83	109,1	100	C 100
1	16	6,85	98	1,15	163,5	100	C 100
1	25	8,45	129	0,727	253,9	100	C 100
1	35	9,55	158	0,524	343,1	1000	R 700
1	50	11,2	197	0,387	463,8	1000	R 800
1	70	12,9	245	0,268	660,6	1000	R 800
1	95	15,1	290	0,193	912,9	1000	R 1000
1	120	16,25	345	0,153	1132	1000	R 1000
1	150	18,2	390	0,124	1400	1000	R 1100
1	185	20,65	445	0,0991	1771	1000	R 1200
1	240	23,45	525	0,0754	2315	1000	R 1300
1	300	26,5	605	0,0601	2858	1000	R 1400

H05V-K / H07V-K

Cu, Cl5, 300/500 V - 450/750 V, 70 °C, Any Color, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking Outer Diameter	PVC, 70°C acc. to T11 Optional See the table
Rating	Nominal Voltage Nominal Voltage Temperature Range Installation Temperature Short Circuit Temperature Test Voltage	300/500 V for H05V-K 450/750 V for H07V-K +70 °C +5 °C +160 °C 2 - 2,5 kV
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	HAR, CPR
Reference Standart	Main	TS EN 50525-2-31

Application

For internal wiring of switching boxes and other electrical appliances. For installation in closed conduits and pipes. Not for direct installation under plaster.

Information Chart

Cu, Cl5, 300/500 V - 450/750 V, 70 °C, Any Color, PVC

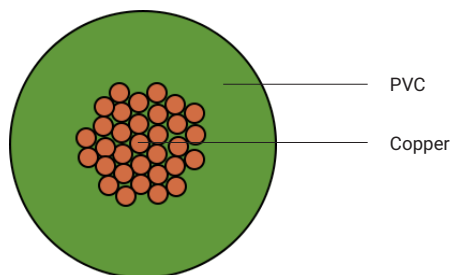
Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	A	ohm/km	kg/km	m	R:Reel C:Coil
1	0,50	2	11	39	8,36	100	C 100
1	0,75	2,25	16	26	10,98	100	C 100
1	1,00	2,4	20	19,5	13,7	100	C 100
1	1,50	2,85	24	13,30	20	100	C 100
1	2,50	3,50	32	7,98	30	100	C 100
1	4,00	4,05	42	4,95	44	100	C 100
1	6,00	4,50	54	3,30	62	100	C 100
1	10,00	6,10	73	1,91	107	100	C 100
1	16,00	7,10	98	1,21	160	100	C 100
1	25,00	8,70	129	0,78	246	1000	R 700
1	35,00	10,40	158	0,55	344	1000	R 700
1	50,00	12,25	198	0,39	485	1000	R 800
1	70,00	14,50	245	0,27	668	1000	R 800
1	95,00	16,65	292	0,21	881	500	R 800
1	120,00	18,55	344	0,16	1126	500	R 900
1	150,00	20,60	391	0,13	1399	500	R 1000
1	185,00	22,80	448	0,11	1708	500	R 1000
1	240,00	26,10	528	0,08	2283	250	R 900
1	300,00	28,60	620	0,06	2811	250	R 1000

H05V2-K / H07V2-K

Cu, Cl5, 300/500 V - 450/750 V, 90 °C, Any Color, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking Outer Diameter	PVC, 90°C acc. to TI3 Optional See the table
Rating	Nominal Voltage Nominal Voltage Temperature Range Installation Temperature Short Circuit Temperature Test Voltage	300/500 V for H05V2-K 450/750 V for H07V2-K +90 °C +5 °C +160 °C 2 - 2,5 kV
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	HAR, CPR
Reference Standart	Main	TS EN 50525-2-31

Application

Suitable for installations inside lighting devices, in which the max. conductor temperature under normal usage conditions does not exceed 90°C. Installation permitted in aboveground or built-in pipes if used for signalling and control circuits only. Contact with water is not permitted.

H05V2-K / H07V2-K

Information Chart

Cu, Cl5, 300/500 V - 450/750 V, 90 °C, Any Color, PVC

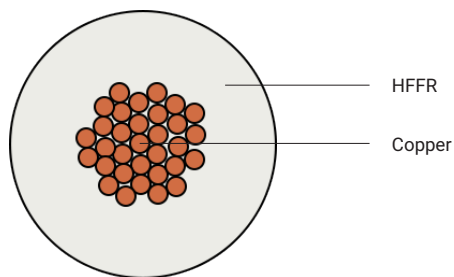
Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	A	ohm/km	kg/km	m	R:Reel C:Coil
1	0,5	2,1	39	8,36	11	100	C 100
1	0,75	2,3	26	10,98	16	100	C 100
1	1	2,5	19,5	13,7	20	100	C 100
1	1,5	2,95	13,3	20	24	100	C 100
1	2,5	3,55	7,98	30	32	100	C 100
1	4	4,1	4,95	44	42	100	C 100
1	6	4,6	3,3	62	54	100	C 100
1	10	6,1	1,91	107	73	100	C 100
1	16	7,1	1,21	160	98	100	C 100
1	25	8,7	0,78	246	129	1000	R 700
1	35	10,4	0,554	344	158	1000	R 700
1	50	12,15	0,386	485	198	1000	R 800
1	70	14,5	0,272	668	245	1000	R 1000
1	95	16,65	0,206	881	292	500	R 800
1	120	18,55	0,161	1126	344	500	R 900
1	150	20,6	0,129	1399	391	500	R 1000
1	185	22,8	0,106	1708	448	500	R 1000
1	240	26,1	0,0801	2283	528	250	R 900
1	300	28,6	0,0641	2811	620	250	R 1000

H05Z1-K / H07Z1-K

Cu, CI5, 300/500 V - 450/750 V, 70 °C, Any Color, HFFR



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking Outer Diameter	HFFR, 70°C acc. to TI7 Optional See the table
Rating	Nominal Voltage Nominal Voltage Temperature Range Installation Temperature Short Circuit Temperature Test Voltage	300/500 V for H05Z1-K 450/750 V for H07Z1-K +70 °C +5 °C +160 °C 2 - 2,5 kV
Tests	Flame Retardant Halogen Free Low Smoke	IEC 60332-1-2 IEC 60754-1/2 IEC 61034-1/2
Approvals	Certificates Available	HAR
Reference Standart	Main	TS EN 50525-3-31

Application

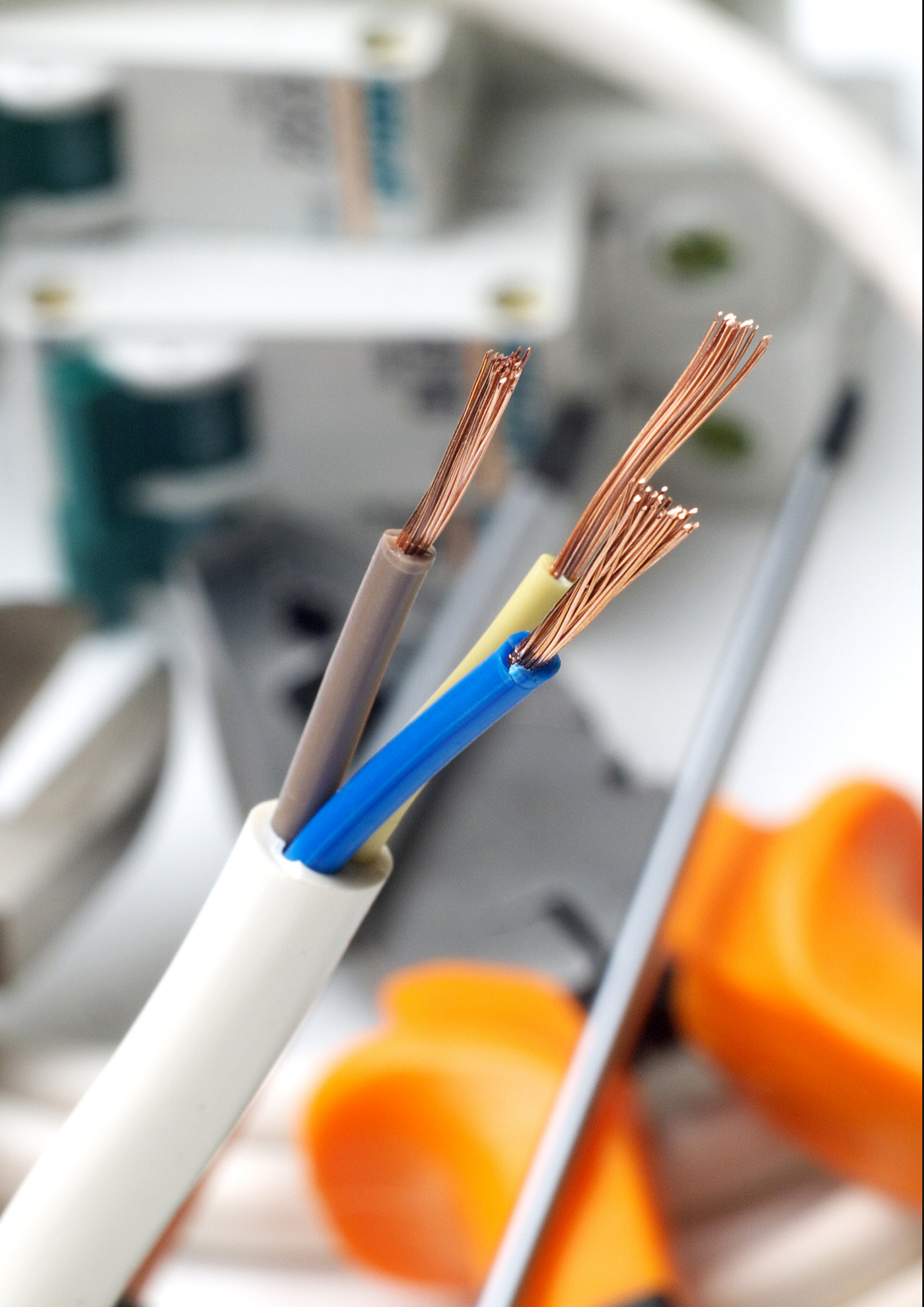
For internal wiring of appliances as well as installation in an electrical conduit pipe either on or underneath plaster.

H05Z1-K / H07Z1-K

Information Chart

Cu, CI5, 300/500 V - 450/750 V, 70 °C, Any Color, HFFR

Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	A	ohm/km	kg/km	m	R:Reel C:Coil
1	0,5	2,1	11	39	8,36	100	C 100
1	0,75	2,3	16	26	10,98	100	C 100
1	1	2,5	20	19,5	13,7	100	C 100
1	1,5	2,95	24	13,3	20	100	C 100
1	2,5	3,55	32	7,98	30	100	C 100
1	4	4,1	42	4,95	44	100	C 100
1	6	4,6	54	3,3	62	100	C 100
1	10	6,1	73	1,91	107	100	C 100
1	16	7,1	98	1,21	160	100	C 100
1	25	8,7	129	0,78	246	1000	R 700
1	35	10,4	158	0,554	344	1000	R 700
1	50	12,15	198	0,386	485	1000	R 800
1	70	14,5	245	0,272	668	1000	R 800
1	95	16,65	292	0,206	881	500	R 800
1	120	18,55	344	0,161	1126	500	R 900
1	150	20,6	391	0,129	1399	500	R 1000
1	185	22,8	448	0,106	1708	500	R 1000
1	240	26,1	528	0,0801	2283	250	R 900
1	300	28,6	620	0,0641	2811	250	R 1000



Multi core electrical appliance cables

Internal or external connections of electrical appliances, installations, buildings, lighting systems are the main usage areas.

They may be used in direct current between 50 V and 450V, alternating current between 75 V and 750 V. They may be suited for fixed or flexible application depending on the wire count. Different temperature ratings and halogen-free materials are available.

Our products have several country approvals and CPR, DOP documents.

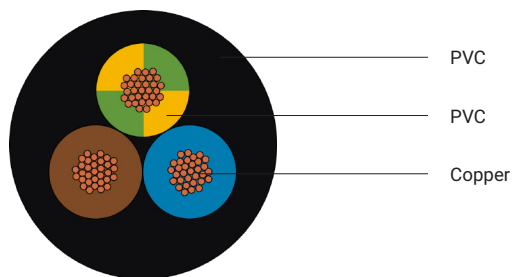
Cables can be modified according to special customer requests.

H03VV-F / H05VV-F

Cu, Cl5, 300/300 V - 300/500 V, 70 °C, Black or White, PVC, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking	PVC, 70°C acc. to TI2 Optional
Outer Jacket	Material Marking Outer Diameter Color	PVC, 70°C acc. to TM2 Optional See the table Black or White
Rating	Nominal Voltage Nominal Voltage Temperature Range Installation Temperature Short Circuit Temperature Test Voltage	300/300 V for H03VV-F 300/500 V for H05VV-F +70 °C +5 °C +160 °C 2 - 2,5 kV
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	HAR, CPR
Reference Standart	Main	TS EN 50525-2-11

Application

For internal wiring and connecting of domestic appliances involving medium mechanical load also in humid spaces.

Information Chart

Cu, Cl5, 300/300 V - 300/500 V, 70 °C, Any Color, PVC, PVC

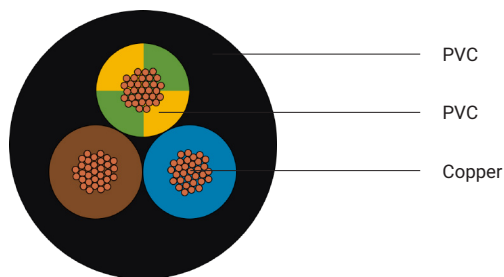
Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	A	ohm/km	kg/km	m	R:Reel C:Coil
2	0,50	5,4	8	39	40,68	100	C 100
3	0,50	5,75	8	39	48,25	100	C 100
4	0,50	6,3	8	39	59,15	100	C 100
2	0,75	6,2	12	26	54,8	100	C 100
2	1,00	6,6	16	19,5	64	100	C 100
2	1,5	7,5	20	13,3	84,8	100	C 100
2	2,5	9,1	25	7,98	129	100	C 100
2	4	10,3	34	4,95	175	100	C 100
3	0,75	6,6	8	26	65,05	100	C 100
3	1,00	6,9	12	19,5	75,1	100	C 100
3	1,5	8,2	16	13,3	106,5	100	C 100
3	2,5	9,9	25	7,98	160,95	100	C 100
3	4	10,95	34	4,95	215,2	100	C 100
4	0,75	7,2	12	26	79,5	100	C 100
4	1,00	7,85	16	19,5	97,9	100	C 100
4	1,5	9,15	20	13,3	135,4	100	C 100
4	2,5	10,8	25	7,98	198,82	100	C 100
4	4	12,2	34	4,95	274	100	C 100
5	0,75	8	12	26	99,32	100	C 100
5	1,00	8,55	16	19,5	117,77	100	C 100
5	1,5	10	20	13,3	164,75	100	C 100
5	2,5	12	25	7,98	246,27	100	C 100
5	4	13,75	34	4,95	345,53	100	C 100

H03V2V2-F / H05V2V2-F

Cu, Cl5, 300/300 V - 300/500 V, 90 °C, Black or White, PVC, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking	PVC, 90°C acc. to TI3 Optional
Outer Jacket	Material Marking Outer Diameter	PVC, 90°C acc. to TM3 Optional See the table
Rating	Nominal Voltage Nominal Voltage Temperature Range Installation Temperature Short Circuit Temperature Test Voltage	300/300 V for H03V2V2-F 300/500 V for H05V2V2-F +90 °C +5 °C +160 °C 2 - 2,5 kV
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	HAR, CPR
Reference Standart	Main	TS EN 50525-2-11

Application

For internal wiring and connecting of domestic appliances involving medium mechanical load and high ambient temperatures also in humid spaces.

H03V2V2-F / H05V2V2-F

Information Chart

Cu, Cl5, 300/300 V - 300/500 V, 90 °C, Black or White, PVC, PVC

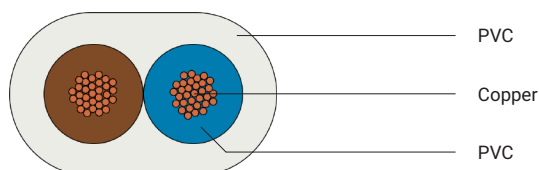
Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	A	ohm/km	kg/km	m	R:Reel C:Coil
2	0,50	5,4	8	39	40,68	100	C 100
3	0,50	5,75	8	39	48,25	100	C 100
4	0,50	6,3	8	39	59,15	100	C 100
2	0,75	6,2	12	26	54,8	100	C 100
2	1,00	6,6	16	19,5	64	100	C 100
2	1,5	7,5	20	13,3	84,8	100	C 100
2	2,5	9,1	25	7,98	129	100	C 100
2	4	10,3	34	4,95	175	100	C 100
3	0,75	6,6	8	26	65,05	100	C 100
3	1,00	6,9	12	19,5	75,1	100	C 100
3	1,5	8,2	16	13,3	106,5	100	C 100
3	2,5	9,9	25	7,98	160,95	100	C 100
3	4	10,95	34	4,95	215,2	100	C 100
4	0,75	7,2	12	26	79,5	100	C 100
4	1,00	7,85	16	19,5	97,9	100	C 100
4	1,5	9,15	20	13,3	135,4	100	C 100
4	2,5	10,8	25	7,98	198,82	100	C 100
4	4	12,2	34	4,95	274	100	C 100
5	0,75	8	12	26	99,32	100	C 100
5	1,00	8,55	16	19,5	117,77	100	C 100
5	1,5	10	20	13,3	164,75	100	C 100
5	2,5	12	25	7,98	246,27	100	C 100
5	4	13,75	34	4,95	345,53	100	C 100

H03VVH2-F / H05VVH2-F

Cu, Cl5, 300/300 V - 300/500 V, 70 °C, Black or White, PVC, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking	PVC, 70°C acc. to TI2 Optional
Outer Jacket	Material Marking Outer Diameter	PVC, 70°C acc. to TM2 Optional See the table
Structure	Shape	Flat
Rating	Nominal Voltage Nominal Voltage Temperature Range Installation Temperature Short Circuit Temperature Test Voltage	300/300 V for H03VVH2-F 300/500 V for H05VVH2-F +70 °C +5 °C +160 °C 2 - 2,5 kV
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	HAR
Reference Standart	Main	TS 9760

Application

For the connection of small electrical appliances (table and standard lamps, kitchen appliances, domestic vacuum cleaners, office appliances, radios etc.) at low mechanical stress in household, kitchen and office. Not for the connection of cooking and heating appliances or commercial electric tools. Not for outdoor use, in agricultural or commercial businesses.

H03VVH2-F / H05VVH2-F

Information Chart

Cu, Cl5, 300/300 V - 300/500 V, 70 °C, Black or White, PVC, PVC

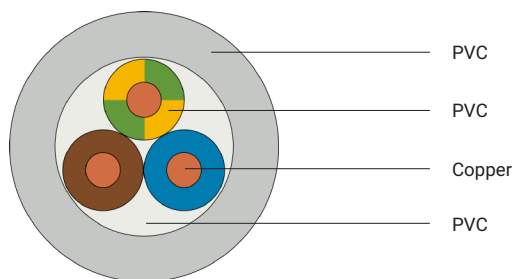
Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	A	ohm/km	kg/km	m	
1	0,5	2	9	36	8,25	100	C 100
1	0,75	2,15	15	24,5	10,65	100	C 100
1	1	2,3	19	18,1	13,26	100	C 100
1	1,5	2,7	24	12,1	19,45	100	C 100
1	2,5	3,3	32	7,41	30,45	100	C 100
1	4	3,75	42	4,61	44,65	100	C 100
1	6	4,25	54	3,08	63,2	100	C 100
1	10	5,45	73	1,83	104,7	100	C 100

NYM

Cu, Cl1-Cl2, 300/500 V, 70 °C, Grey, PVC, PVC, PVC



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Construction and Technical Info

Conductor	Cross Section	See the table
	Material	Copper
	Wire Count	Class 1 until 10 mm ² , Class 2 above 10 mm ²
	Wire Diameter	Class 1 until 10 mm ² , Class 2 above 10 mm ²
Insulation	Material	PVC, 70°C acc. to T11
	Marking	VDE 0293-308
Filler	Material	PE
Outer Jacket	Material	PVC, 70°C acc. to TM1
	Marking	Optional
	Outer Diameter	See the table
	Color	Grey RAL 7035
Rating	Nominal Voltage	300/300 V
	Temperature Range	+70 °C
	Installation Temperature	+5 °C
	Test Voltage	2 kV
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	VDE, CPR
Reference Standart	Main	HD 21.4
	Alternative	VDE 0250-204

Application

For installation in, on or under plaster, in dry, damp or wet rooms as well as in walls and concrete (except for shaken, jolted, tamped concrete). Also suitable for installation outdoors if protected from sunlight.

Information Chart

Cu, Cl1-Cl2, 300/500 V, 70 °C, Grey, PVC, PVC, PVC

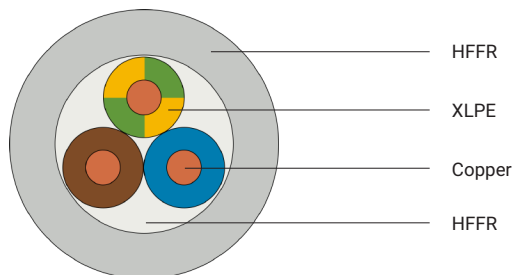
Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm²	mm	A	ohm/km	kg/km	m	R:Reel C:Coil
2	1,5	8,8	115	22	12,1	100	C 100
2	2,5	10	156	30	7,41	100	C 100
2	4	10,8	198	40	4,61	100	C 100
2	6	11,8	253	51	3,08	100	C 100
2	10	15,85	444	70	1,83	1000	R 1000
2	16	17,75	603	94	1,15	1000	R 1100
3	1,5	9,25	135	22	12,1	100	C 100
3	2,5	10,55	186	30	7,41	100	C 100
3	4	11,45	241	40	4,61	100	C 100
3	6	12,9	324	51	3,08	100	C 100
3	10	16,8	545	70	1,83	1000	R 1000
3	16	19,25	773	94	1,15	1000	R 1100
4	1,5	10,05	160	18,5	12,1	100	C 100
4	2,5	11,45	223	25	7,41	100	C 100
4	4	12,75	301	34	4,61	100	C 100
4	6	14,3	407	43	3,08	100	C 100
4	10	18,35	668	60	1,83	1000	R 1100
4	16	21,05	954	80	1,15	1000	R 1200
5	1,5	10,8	191	17,5	12,1	100	C 100
5	2,5	12,45	268	24	7,41	100	C 100
5	4	14,3	380	32	4,61	100	C 100
5	6	15,75	501	41	3,08	100	C 100
5	10	19,98	813	57	1,83	1000	R 1200
5	16	23,35	1186	76	1,15	1000	R 1300

NHXMH

Cu, Cl1-Cl2, 300/500 V, 90 °C, Grey, XLPE, HFFR, HFFR



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Construction and Technical Info

Conductor	Cross Section	See the table
	Material	Copper
	Wire Count	Class 1 until 10 mm², Class 2 above 10 mm²
	Wire Diameter	Class 1 until 10 mm², Class 2 above 10 mm²
Insulation	Material	XLPE, acc. to 2XI1
	Marking	VDE 0293-308
Filler	Material	HFFR
Outer Jacket	Material	HFFR, acc. to HM2
	Marking	Optional
	Outer Diameter	See the table
	Color	Grey RAL 7035
Rating	Nominal Voltage	300/500 V
	Temperature Range	+90 °C
	Installation Temperature	+5 °C
	Short Circuit Temperature	+250 °C
	Test Voltage	2 - 2,5 kV
Tests	Flame Retardant	IEC 60332-1-2 and IEC 60332-3-24 Cat.C
	Halogen Free	IEC 60754-1/2
	Low Smoke	IEC 61034-1/2
	Droplet Test	IEC 60332-1-3
Approvals	Certificates Available	VDE, CPR
Reference Standart	Main	TSE K 328
	Alternative	VDE 0250-214

Application

Low-smoke, zero-halogen, flameretardant building wire, for installation on and under plaster in dry and wet rooms, as well as in concrete (except for shaken, jolted, tamped concrete). For indoor use only, primarily in buildings with a high concentration of people and material assets

Information Chart

Cu, CI1-CI2, 300/500 V, 90 °C, Grey, XLPE, HFFR, HFFR

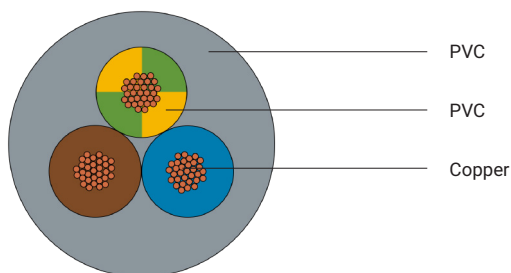
Conductor Count	Conductor Section	Outer Diameter	Current Capacity in Air	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	kg/km	A	ohm/km	m	R:Reel C:Coil
2	1,5	8,6	115	22	12,1	100	C 100
2	2,5	9,14	156	30	7,41	100	C 100
2	4	10,42	198	40	4,61	100	C 100
2	6	11,46	253	51	3,08	100	C 100
2	10	14,26	444	70	1,83	1000	R 900
2	16	16,56	603	80	1,15	1000	R 1000
3	1,5	8,9	135	22	12,1	100	C 100
3	2,5	9,8	186	30	7,41	100	C 100
3	4	10,96	241	40	4,61	100	C 100
3	6	12,47	324	51	3,08	100	C 100
3	10	15,03	545	70	1,83	1000	R 900
3	16	17,53	773	80	1,15	1000	R 1000
4	1,5	9,43	160	22	12,1	100	C 100
4	2,5	10,4	223	30	7,41	100	C 100
4	4	12,25	301	40	4,61	100	C 100
4	6	13,51	407	51	3,08	100	C 100
4	10	16,33	668	70	1,83	1000	R 1000
4	16	20,01	954	80	1,15	1000	R 1100
5	1,5	9,995	191	22	12,1	100	C 100
5	2,5	11,075	268	30	7,41	100	C 100
5	4	13,63	380	40	4,61	100	C 100
5	6	14,98	501	51	3,08	100	C 100
5	10	17,68	813	70	1,83	1000	R 1000
5	16	22,125	1186	80	1,15	1000	R 1200

FROR

Cu, Cl5, 300/500 V - 450/750 V, 70 °C, Grey, PVC, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking for 300/500 V Marking for 450/750 V	PVC, acc. to TI2 Black numbered HD 308
Outer Jacket	Material Marking Outer Diameter Color	PVC, acc. to TM2 Optional See the table Grey
Rating	Nominal Voltage Temperature Range Short Circuit Temperature Minimum Bending Radius (Fixed) Minimum Bending Radius (Mobile)	300/500 V or 450/750 V -15 °C +70 °C +160 °C 4 x external diameter 10 x external diameter
Tests	Flame Propagation Fire Propagation Gas Emission	CEI EN 60332-1-2 CEI 20-22 II CEI EN 50267-2-1
Reference Standart	Main	IMQ-CPT 007 - EN 50414

Application

Suitable for connection of movable equipment or for fixed laying in areas with risk of fire. To be used in dry or wet interiors and for occasional or temporary use outdoor. Not allowed for laying underground, even if protected.

Information Chart

Cu, Cl5, 300/500 V - 450/750 V, 70 °C, Grey, PVC, PVC

Conductor Count	Conductor Section	Outer Diameter	Current Capacity at 30 °C			Conductor Resistance	Total Weight
			In Tube	Fixed Laying	Mobile Laying		
No.	mm ²	mm	A	A	A	A	ohm/km
FROR 450/750 V							
2	1	7,4	13,5	15	12,5	19,5	79
2	1,5	7,9	16,5	22	17	13,3	95
2	2,5	9,7	23	30	22,5	7,98	145
2	4	10,8	30	40	30	4,95	191
2	6	12	38	51	40	3,3	250
3	1	7,8	13,5	15	12,5	19,5	93
3	1,5	8,4	16,5	22	17	13,3	113
3	2,5	10,3	23	30	22,5	7,98	176
3	4	11,7	30	40	30	4,95	240
3	6	13	38	51	40	3,3	315
4	1	8,5	12	13,6	11,5	19,5	110
4	1,5	9,3	15	18,5	15	13,3	140
4	2,5	11,2	20	25	21	7,98	210
4	4	12,7	27	34	28	4,95	290
4	6	14,1	34	43	36	3,3	385
5	1	9,5	12	13,6	11,5	19,5	140
5	1,5	10,4	15	18,5	15	13,3	177
5	2,5	12,4	20	25	21	7,98	265
5	4	14,3	27	34	28	4,95	370
5	6	15,7	34	43	36	3,3	480
FROR 300/500 V							
7	1	9,5	9	10	9	19,5	153
10	1	12,3	8,5	9,5	8	19,5	240
12	1	12,7	8	9	7,5	19,5	265
14	1	13,5	7,5	8,5	7	19,5	300
16	1	14,2	7	8	7	19,5	335
19	1	15,2	7	7,5	6,5	19,5	390
24	1	18,4	6,5	7	6	19,5	565
27	1	19	5,5	6,5	5	19,5	610
7	1,5	11,2	11,5	13	11	13,3	220
10	1,5	14,3	10,5	12	10	13,3	335
12	1,5	15	10	11	9,5	13,3	375
14	1,5	15,7	9,5	10,5	9	13,3	420
16	1,5	16,8	9	10	8,5	13,3	475
19	1,5	17,7	8,5	9,5	8	13,3	540
24	1,5	21,5	8	9	7,5	13,3	790
27	1,5	22,2	7	8	6,5	13,3	845



UL / CSA recognized electrical appliance cables

Electrical and electronical appliance producers who wants to reach North American market requires UL / CSA approved cables.

UL offers a comprehensive certification program for appliance wiring material (AWM) and Borsan is certified for more than 70 different styles.

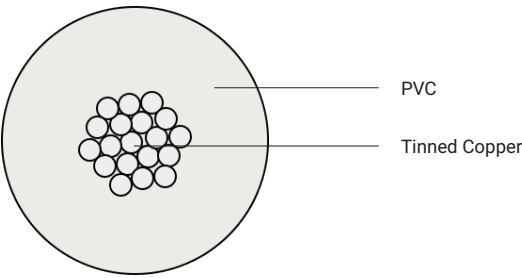
Different materials such as PVC, TPU, TPES and PP are available.

UL 1015 - LiYW

Cu-Sn, Cl5, 600 V, 105 °C, Any Color, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Tinned Copper See the table See the table
Insulation	Material Marking Outer Diameter	PVC, 105°C acc. to UL acc. to UL See the table
Rating	Nominal Voltage Temperature Range	600 V AC, 750 V DC +105 °C
Tests	Flame Retardant	Horizontal Flame Test
Approvals	Certificates Available	UL, CSA
Reference Standart	Main	AWM UL 758, CSA C22.2

Application

Internal wiring of appliances. Tags may also indicate the following: 2,500 V peak - for electronic use only.

Information Chart

Cu-Sn, Cl5, 600 V, 105 °C, Any Color, PVC

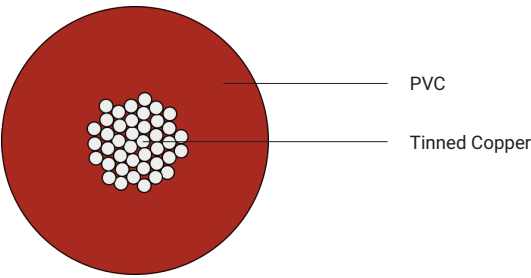
Conductor Count	Conductor Section	Conductor Section	Wire Count	Wire Diameter	Outer Diameter	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	AWG	mm ²	No.	mm	mm	ohm/km	kg/km	m	R:Reel C:Coil
1	26	0,14	7	0,16	2,1	139,76	5,5	100	C 100
1	18	1	19	0,254	2,85	20,4	12	100	C 100
1	18	0,82	16	0,254	2,8	25,2	14	100	C 100
1	14	2,1	41	0,254	3,6	9,65	28	100	C 100
1	10	5,3	105	0,254	4,8	3,54	61	100	C 100

UL 1028 - LiYW

Cu-Sn, Cl5, 600 V, 105 °C, Any Color, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Tinned Copper See the table See the table
Insulation	Material Marking Outer Diameter	PVC, 105°C acc. to UL acc. to UL See the table
Rating	Nominal Voltage Temperature Range	600 V AC +105 °C
Tests	Flame Retardant	Horizontal Flame Test
Approvals	Certificates Available	UL, CSA
Reference Standart	Main	AWM UL 758, CSA C22.2

Application

Internal wiring of appliances. Tags may also indicate the following: 2,500 V peak - for electronic use only.

Information Chart

Cu-Sn, Cl5, 600 V, 105 °C, Any Color, PVC

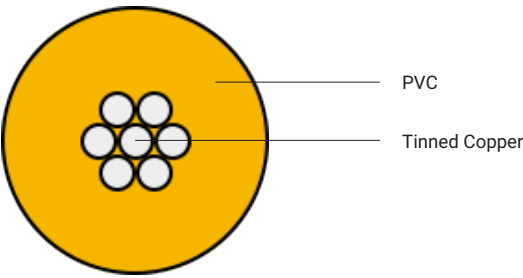
Conductor Count	Conductor Section	Conductor Section	Wire Count	Wire Diameter	Outer Diameter	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	AWG	mm ²	No.	mm	mm	ohm/km	kg/km	m	R:Reel C:Coil
1	22	0,35	7	0,254	3,3	54,79	13	100	C 100
1	18	0,82	16	0,254	3,7	25,2	20	100	C 100
1	14	2,10	41	0,254	4,5	9,65	36	100	C 100
1	10	5,3	105	0,254	5,6	3,77	70	100	C 100
1	8	8,2	168	0,254	6,5	2,375	101	100	C 100

UL 1569 - LiYW

Cu-Sn, Cl5, 300 V, 105 °C, Any Color, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Tinned Copper See the table See the table
Insulation	Material Marking Outer Diameter	PVC, 105°C acc. to UL acc. to UL See the table
Rating	Nominal Voltage Temperature Range	300 V AC +105 °C
Tests	Flame Retardant	Horizontal Flame Test
Approvals	Certificates Available	UL, CSA
Reference Standart	Main	AWM UL 758, CSA C22.2

Application

Internal wiring of appliances or electronic equipment where not subjected to movement or mechanical damage. Tag may also indicate the following, "600 Volts Peak for Electronic Use Only."

Information Chart

Cu-Sn, Cl5, 300 V, 105 °C, Any Color, PVC

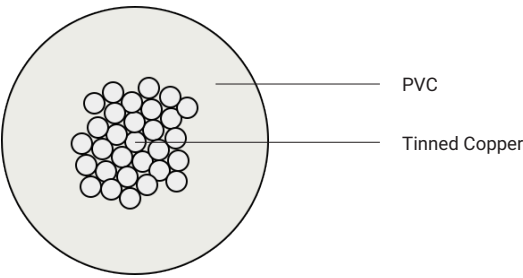
Conductor Count	Conductor Section	Conductor Section	Wire Count	Wire Diameter	Outer Diameter	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	AWG	mm ²	No.	mm	mm	ohm/km	kg/km	m	R:Reel C:Coil
1	30	0,06	7	0,102	1,15	354,33	2	100	C 100
1	28	0,09	7	0,127	1,25	223,75	2,5	100	C 100
1	24	0,22	7	0,203	1,45	85,96	4	100	C 100
1	22	0,38	12	0,203	1,6	55	5,5	100	C 100
1	20	0,56	19	0,195	2,05	34,6	9	100	C 100
1	16	1,32	26	0,254	2,4	15,06	15	100	C 100
1	14	2,1	41	0,254	2,8	9,65	24	100	C 100
1	10	5,3	105	0,254	4	3,77	55	100	C 100

UL 1015 - H07V2-K

Cu-Sn, Cl5, 600 V, 105 °C, Any Color, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Diameter	See the table Tinned Copper See the table
Insulation	Material Marking Outer Diameter	PVC, 105°C acc. to UL acc. to UL See the table
Rating	Nominal Voltage Temperature Range	600 V AC, 750 V DC +105 °C
Tests	Flame Retardant	Horizontal Flame Test
Approvals	Certificates Available	UL, CSA, HAR
Reference Standart	Main Alternative	AWM UL 758, CSA C22.2 HD 21.7

Application

Internal wiring of appliances. Tags may also indicate the following: 2,500 V peak - for electronic use only.

Information Chart

Cu-Sn, Cl5, 600 V, 105 °C, Any Color, PVC

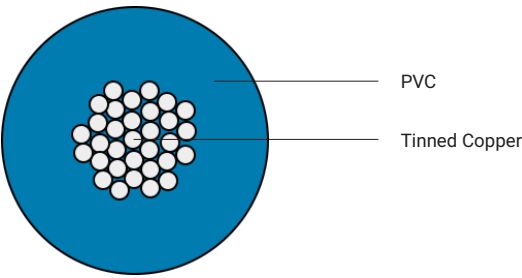
Conductor Count	Conductor Section	Wire Diameter	Outer Diameter	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	mm	ohm/km	kg/km	m	R:Reel C:Coil
1	1,5	0,26	3	13,3	20	100	C 100
1	2,5	0,26	3,7	7,98	32	100	C 100
1	4	0,31	4,2	4,95	47	100	C 100
1	6	0,31	4,9	3,3	68	100	C 100
1	10	0,41	6,3	1,91	110	100	C 100
1	16	0,41	7,4	1,21	162	100	C 100
1	25	0,41	8,9	0,78	261	100	C 100
1	35	0,41	10,6	0,554	362	100	C 100

UL 1569 - H05V2-K

Cu-Sn, Cl5, 300 V, 105 °C, Any Color, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Diameter	See the table Tinned Copper See the table
Insulation	Material Marking Outer Diameter	PVC, 105°C acc. to UL acc. to UL See the table
Rating	Nominal Voltage Temperature Range	300 V AC +105 °C
Tests	Flame Retardant	Horizontal Flame Test
Approvals	Certificates Available	UL, CSA, HAR
Reference Standart	Main Alternative	AWM UL 758, CSA C22.2 HD 21.7

Application

Internal wiring of appliances or electronic equipment where not subjected to movement or mechanical damage. Tag may also indicate the following, "600 Volts Peak for Electronic Use Only."

UL 1569 - H05V2-K

Information Chart

Cu-Sn, Cl5, 300 V, 105 °C, Any Color, PVC

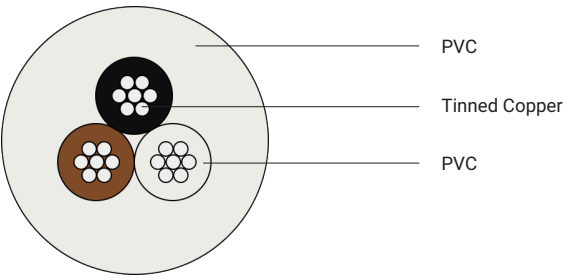
Conductor Count	Conductor Section	Wire Diameter	Outer Diameter	Conductor Resistance	Total Weight	Packing Length	Packing Type
No.	mm ²	mm	mm	ohm/km	kg/km	m	R:Reel C:Coil
1	0,5	0,21	2,2	39	9	100	C 100
1	0,75	0,21	2,4	26	11	100	C 100
1	1	0,21	2,6	19,5	14	100	C 100

UL 2464 - LiYY

Cu-Sn, Cl5, 300 V, 80 °C, Black, Grey or White, PVC, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Diameter	See the table Tinned Copper See the table
Insulation	Material Marking Outer Diameter	PVC, acc. to UL acc. to UL See the table
Outer Jacket	Material Marking Outer Diameter	PVC, acc. to UL acc. to UL See the table
Rating	Nominal Voltage Temperature Range	300 V AC +80 °C
Tests	Flame Retardant	Cable Flame Test
Approvals	Certificates Available	UL, CSA
Reference Standart	Main	AWM UL 758

Application

Internal wiring or external interconnection of electronic equipment.

Information Chart

Cu-Sn, Cl5, 300 V, 80 °C, Black, Grey or White, PVC, PVC

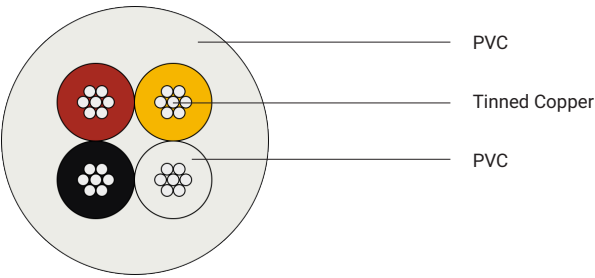
Conductor Count	Conductor Section	Wire Count	Wire Diameter	Outer Diameter	Conductor Resistance	Packing Length	Packing Type
No.	mm ²	No.	mm	mm	ohm/km	m	R:Reel C:Coil
2	0,22	7	0,203	3,8	85,96	100	C 100
3	0,35	7	0,254	4,3	54,79	100	C 100
4	0,56	7	0,32	5,2	34,12	100	C 100
2	0,82	16	0,254	5	25,2	100	C 100
3	1,32	26	0,254	5,9	15,06	100	C 100

UL 2517 - LiYY

Cu-Sn, Cl5, 300 V, 105 °C, Optional, PVC, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Diameter	See the table Tinned Copper See the table
Insulation	Material Marking Outer Diameter	PVC, acc. to UL acc. to UL See the table
Outer Jacket	Material Marking Outer Diameter	PVC, acc. to UL acc. to UL See the table
Rating	Nominal Voltage Temperature Range	300 V AC +105 °C
Tests	Flame Retardant	Cable Flame Test
Approvals	Certificates Available	UL, CSA
Reference Standart	Main	AWM UL 758

Application

External interconnection of electronic equipment or internal wiring of electronic equipment or appliances. Tags may also indicate the following: "600 Volts peak for Electronic Use Only".

Information Chart

Cu-Sn, Cl5, 300 V, 105 °C, Optional, PVC, PVC

Conductor Count	Conductor Section	Wire Count	Wire Diameter	Outer Diameter	Conductor Resistance	Packing Length	Packing Type
No.	mm ²	No.	mm	mm	ohm/km	m	R:Reel C:Coil
3	0,22	7	0,203	4,6	85,96	100	C 100
4	0,35	7	0,254	5,3	54,79	100	C 100
5	0,56	7	0,32	6,5	34,12	100	C 100
2	0,82	16	0,254	5,6	25,2	100	C 100



Telecom installation cables

Indoor telecommunication systems such as security alarms, phone lines, automation systems are the main usage areas. They are intended to transmit signals with weak current.

Screens for providing electromagnetical protection, halogen-free or fire resistant materials for extra safety applications are available.

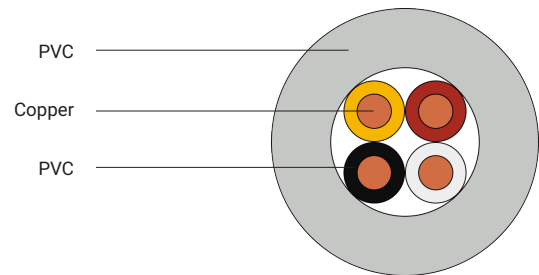
Cables can be redesigned according to customer needs.



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J-YY

Cu, Cl1, 300 V, 80 °C, Grey, PVC, PVC



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 1 Class 1
Insulation	Material Marking Outer Diameter	PVC, acc. to TI1 Colour code See the table
Screen	Material	PET foil
Outer Jacket	Material Marking Outer Diameter	PVC, acc. to TM1 Optional See the table
Rating	Nominal Voltage Temperature Range	300 V +70 °C
Tests	Flame Retardant	IEC 60332-1-2
Reference Standart	Main	VDE 0815

Application

Suitable for telecommunications and data processing systems, for connecting public and private telephone equipment. For static installations in dry or humid environments, and on the outside walls of buildings, both on or under plaster.

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
1	0,4	2,8	146,6	11
2	0,4	3,2	146,6	15
3	0,4	3,8	146,6	20
4	0,4	4,5	146,6	26
5	0,4	4,8	146,6	30
6	0,4	5	146,6	34
7	0,4	5,4	146,6	40
8	0,4	5,6	146,6	43
9	0,4	6	146,6	49
10	0,4	6,3	146,6	56
12	0,4	6,8	146,6	64
14	0,4	7,3	146,6	73
15	0,4	7,5	146,6	77
16	0,4	7,7	146,6	81
20	0,4	7,6	146,6	96
25	0,4	9,2	146,6	117
1	0,5	3,1	93	14
2	0,5	3,5	93	20
3	0,5	4,3	93	27
4	0,5	5,1	93	34
5	0,5	5,4	93	41
6	0,5	5,6	93	46
7	0,5	6,1	93	53
8	0,5	6,4	93	59
9	0,5	6,7	93	66
10	0,5	7,2	93	76
12	0,5	7,7	93	87
14	0,5	8,3	93	100
15	0,5	8,5	93	106
16	0,5	8,7	93	111
20	0,5	8,6	93	132
25	0,5	10,5	93	163
1	0,6	3,7	64,6	20
2	0,6	4,3	64,6	29
3	0,6	5,3	64,6	39
4	0,6	6,2	64,6	50
5	0,6	6,6	64,6	59
6	0,6	6,9	64,6	67
7	0,6	7,6	64,6	78
8	0,6	7,9	64,6	86
9	0,6	8,2	64,6	94
10	0,6	8,8	64,6	108
12	0,6	9,4	64,6	125
14	0,6	10,1	64,6	144
15	0,6	10,4	64,6	152
16	0,6	10,7	64,6	160
20	0,6	10,5	64,6	191
25	0,6	13	64,6	235
1	0,8	4,5	37	30
2	0,8	5,2	37	45
3	0,8	6,4	37	62
4	0,8	7,7	37	78
5	0,8	8,1	37	93
6	0,8	8,5	37	107
7	0,8	9,3	37	124
8	0,8	9,7	37	137
9	0,8	10,1	37	151
10	0,8	10,7	37	173
12	0,8	11,6	37	201
14	0,8	12,5	37	231
15	0,8	12,8	37	244
16	0,8	13,2	37	258
20	0,8	13	37	314
25	0,8	16,2	37	386

Information Chart

Cu, Cl1, 300 V, 80 °C, Gray, PVC, PVC

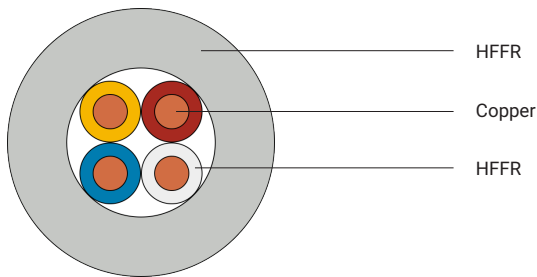
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
1	0,9	5	28,8	38
2	0,9	5,9	28,8	56
3	0,9	7,2	28,8	78
4	0,9	8,6	28,8	98
5	0,9	9,1	28,8	117
6	0,9	9,6	28,8	134
7	0,9	10,4	28,8	153
8	0,9	10,9	28,8	172
9	0,9	11,4	28,8	190
10	0,9	12,1	28,8	218
12	0,9	13,2	28,8	256
14	0,9	14,2	28,8	294
15	0,9	14,6	28,8	311
16	0,9	15	28,8	329
20	0,9	14,9	28,8	406
25	0,9	18,6	28,8	500

J-HH

Cu, Cl1, 300 V, 80 °C, Grey, HFFR, HFFR



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 1 Class 1
Insulation	Material Marking Outer Diameter	HFFR, acc. to HI1 Colour code See the table
Screen	Material	PET foil
Outer Jacket	Material Marking Outer Diameter	HFFR, acc. to HM1 Optional See the table
Rating	Nominal Voltage Temperature Range	300 V +70 °C
Tests	Flame Retardant Halogen Free Low Smoke	IEC 60332-1-2 and IEC 60332-3-24 Cat.C IEC 60754-1/2 IEC 61034-1/2
Reference Standard	Main	VDE 0815

Application

Suitable for telecommunications and data processing systems, for connecting public and private telephone equipment. For static installations in dry or humid environments, and on the outside walls of buildings, both on or under plaster.

Information Chart

Cu, Cl1, 300 V, 80 °C, Grey, HFFR, HFFR

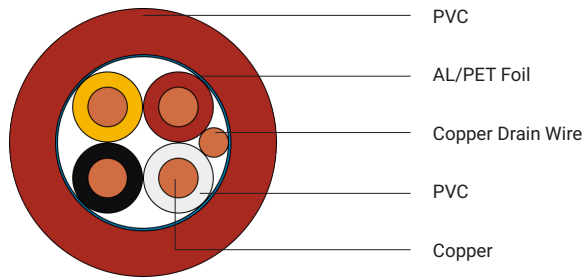
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
1x2	0,4	2,8	146,6	10
2x2	0,4	3,2	146,6	14
3x2	0,4	3,8	146,6	19
4x2	0,4	4,5	146,6	24
5x2	0,4	4,8	146,6	29
6x2	0,4	5	146,6	32
7x2	0,4	5,4	146,6	38
8x2	0,4	5,6	146,6	41
10x2	0,4	6,3	146,6	54
12x2	0,4	6,8	146,6	62
14x2	0,4	7,2	146,6	70
15x2	0,4	7,4	146,6	74
16x2	0,4	7,6	146,6	77
1x2	0,5	3,1	93	13
2x2	0,5	3,5	93	19
3x2	0,5	4,3	93	26
4x2	0,5	5,1	93	33
5x2	0,5	5,4	93	39
6x2	0,5	5,6	93	44
7x2	0,5	6,1	93	51
8x2	0,5	6,4	93	57
10x2	0,5	7,2	93	74
12x2	0,5	7,7	93	86
14x2	0,5	8,2	93	97
15x2	0,5	8,4	93	102
16x2	0,5	8,6	93	107
1x2	0,6	3,7	64,6	19
2x2	0,6	4,3	64,6	27
3x2	0,6	5,3	64,6	38
4x2	0,6	6,2	64,6	48
5x2	0,6	6,6	64,6	57
6x2	0,6	6,9	64,6	65
7x2	0,6	7,5	64,6	73
8x2	0,6	7,9	64,6	83
10x2	0,6	8,8	64,6	106
12x2	0,6	9,5	64,6	123
14x2	0,6	10,1	64,6	139
15x2	0,6	10,4	64,6	147
16x2	0,6	10,6	64,6	155
1x2	0,8	4,5	37	29
2x2	0,8	5,2	37	43
3x2	0,8	6,4	37	60
4x2	0,8	7,7	37	76
5x2	0,8	8,1	37	90
6x2	0,8	8,5	37	104
7x2	0,8	9,2	37	118
8x2	0,8	9,5	37	129
10x2	0,8	10,6	37	168
12x2	0,8	11,6	37	199
14x2	0,8	12,4	37	226
15x2	0,8	12,8	37	239
1x2	0,9	5	28,8	36
2x2	0,9	5,9	28,8	54
3x2	0,9	7,2	28,8	75
4x2	0,9	8,6	28,8	95
5x2	0,9	9,1	28,8	114
6x2	0,9	9,6	28,8	131
7x2	0,9	10,4	28,8	149
8x2	0,9	10,9	28,8	168
10x2	0,9	12,1	28,8	215
12x2	0,9	13	28,8	248
14x2	0,9	14,1	28,8	288
15x2	0,9	14,5	28,8	305

J-Y(St)Y

Cu, Cl1, 300 V, 80 °C, Red, PVC, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 1 Class 1
Insulation	Material Marking Outer Diameter	PVC, acc. to TI1 Colour code See the table
Screen	Material	PET foil
Drain Wire	Material	Solid copper wire
Screen	Material	AL/PET foil
Outer Jacket	Material Marking Outer Diameter	PVC, acc. to TM1 Optional See the table
Rating	Nominal Voltage Temperature Range	300 V +70 °C
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	CPR
Reference Standart	Main	VDE 0815

Application

Suitable for telecommunications and data processing systems, for connecting public and private telephone equipment. For static installations in dry or humid environments, and on the outside walls of buildings, both on or under plaster. The screen offers protection from electromagnetic interference. Can be used in static installations down to -20°C.

Information Chart

Cu, Cl1, 300 V, 80 °C, Red, PVC, PVC

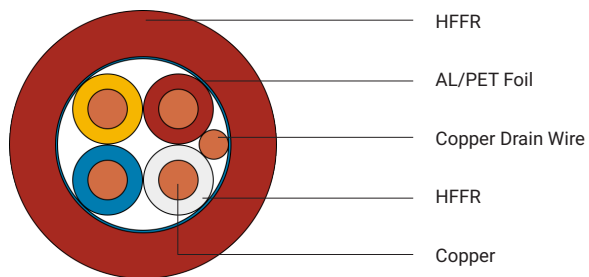
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
1x2	0,6	4,1	130	21
2x2	0,6	4,7	130	31
3x2	0,6	6,1	130	45
4x2	0,6	7,2	130	57
5x2	0,6	7,5	130	67
6x2	0,6	9,1	130	82
8x2	0,6	9,3	130	98
10x2	0,6	9,7	130	116
12x2	0,6	10,4	130	134
14x2	0,6	11,3	130	157
1x2	0,8	4,6	73,2	28
2x2	0,8	5,3	73,2	43
3x2	0,8	6,9	73,2	63
4x2	0,8	8,1	73,2	80
5x2	0,8	8,6	73,2	96
6x2	0,8	10,4	73,2	116
8x2	0,8	10,7	73,2	141
10x2	0,8	11,1	73,2	169
12x2	0,8	11,8	73,2	197
14x2	0,8	12,8	73,2	228

J-H(St)H

Cu, Cl1, 300 V, 80 °C, Red, HFFR, HFFR



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 1 Class 1
Insulation	Material Marking Outer Diameter	HFFR, acc. to HI1 Colour code See the table
Screen	Material	PET foil
Drain Wire	Material	Solid copper wire
Screen	Material	AL/PET foil
Outer Jacket	Material Marking Outer Diameter	HFFR, acc. to HM1 Optional See the table
Rating	Nominal Voltage Temperature Range	300 V +70 °C
Tests	Flame Retardant Halogen Free Low Smoke	IEC 60332-1-2 and IEC 60332-3-24 Cat.C IEC 60754-1/2 IEC 61034-1/2
Approvals	Certificates Available	CPR
Reference Standart	Main	VDE 0815

Application

Suitable for telecommunications and data processing systems, for connecting public and private telephone equipment. For static installations in dry or humid environments, and on the outside walls of buildings, both on or under plaster. The screen offers protection from electromagnetic interference. Can be used in static installations down to -20°C.

Information Chart

Cu, Cl1, 300 V, 80 °C, Red, HFFR, HFFR

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
1x2	0,6	4,1	130	22
2x2	0,6	4,7	130	32
3x2	0,6	6,1	130	46
4x2	0,6	7,2	130	58
5x2	0,6	7,5	130	69
6x2	0,6	9,1	130	84
8x2	0,6	9,3	130	101
10x2	0,6	9,7	130	119
12x2	0,6	10,4	130	138
14x2	0,6	11,3	130	162
1x2	0,8	4,6	73,2	29
2x2	0,8	5,3	73,2	44
3x2	0,8	6,9	73,2	65
4x2	0,8	8,1	73,2	82
5x2	0,8	8,6	73,2	98
6x2	0,8	10,4	73,2	119
8x2	0,8	10,7	73,2	145
10x2	0,8	11,1	73,2	173
12x2	0,8	11,8	73,2	199
14x2	0,8	12,8	73,2	233

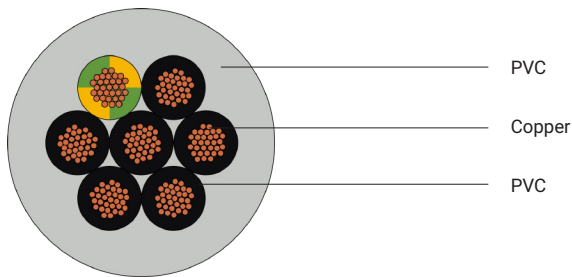


Control cables

They are used as measurement and control cable in industrial plants, machines, production lines, computer systems, remote tools. Conductors are marked with white numbers on top black.

Cables can be produced with different materials according to customer needs such as oil, abrasion resistance, increased flexibility.

CPR, DOP documents and approvals are available.



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking Outer Diameter	PVC, acc. to TI2 Optional See the table
Outer Jacket	Material Marking Outer Diameter	PVC, acc. to TM2 Optional See the table
Rating	Nominal Voltage Temperature Range Test Voltage	300/500 V +70 °C 4 kV
Tests	Flame Retardant	IEC 60332-1
Approvals	Certificates Available	CPR
Reference Standart	Main	VDE 0245

Application

Flexible signal cable used for surveillance and control of static or mobile devices in industry, electric plants or offices. Lightweight and relatively thin, resistant to medium mechanical loads, used for fixed or limitedly mobile installations (not permanently mobile) without strain. Installed in dry or damp premises, outdoor application only under protection against UV-irradiation. Not intended for laying in ground or water.

Information Chart

Cu, Cl5, 300/500 V, 70 °C, Grey, PVC, PVC

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,5	5	39	36
3	0,5	5,3	39	44
4	0,5	5,7	39	52
5	0,5	6,2	39	63
6	0,5	6,8	39	76
7	0,5	6,8	39	79
8	0,5	7,4	39	92
9	0,5	8,6	39	106
10	0,5	8,6	39	109
12	0,5	9	39	126
14	0,5	9,4	39	142
16	0,5	9,9	39	158
18	0,5	10,5	39	180
20	0,5	11,2	39	202
24	0,5	12,4	39	233
25	0,5	12,4	39	246
2	0,75	5,4	26	43
3	0,75	5,8	26	54
4	0,75	6,2	26	65
5	0,75	6,9	26	81
6	0,75	7,4	26	95
7	0,75	7,4	26	100
8	0,75	8,1	26	118
9	0,75	9,5	26	137
10	0,75	9,5	26	141
12	0,75	9,9	26	161
14	0,75	10,4	26	185
16	0,75	11	26	206
18	0,75	11,6	26	235
20	0,75	12,4	26	263
24	0,75	13,7	26	304
25	0,75	13,7	26	322
2	1	5,8	19,5	51
3	1	6,2	19,5	64
4	1	6,8	19,5	79
5	1	7,4	19,5	96
6	1	8,1	19,5	115
7	1	8,1	19,5	121
8	1	8,8	19,5	141
9	1	10,4	19,5	165
10	1	10,4	19,5	171
12	1	10,8	19,5	196
14	1	11,4	19,5	224
16	1	12	19,5	250
18	1	12,7	19,5	285
20	1	13,5	19,5	319
24	1	15	19,5	368
25	1	15	19,5	390
2	1,5	6,4	13,3	65
3	1,5	6,8	13,3	83
4	1,5	7,5	13,3	104
5	1,5	8,3	13,3	129
6	1,5	9	13,3	152
7	1,5	9	13,3	162
8	1,5	9,9	13,3	191
9	1,5	11,7	13,3	222
10	1,5	11,7	13,3	232
12	1,5	12,1	13,3	267
14	1,5	12,8	13,3	307
16	1,5	13,5	13,3	344
18	1,5	14,3	13,3	391
20	1,5	15,2	13,3	438
24	1,5	16,9	13,3	506
25	1,5	16,9	13,3	535

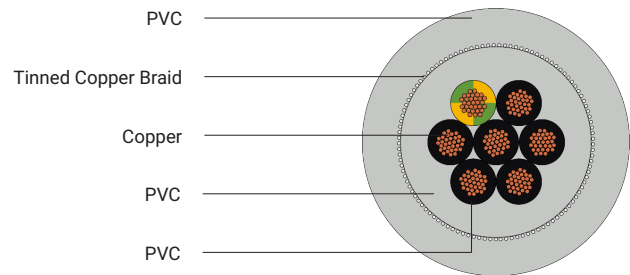
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	2,5	7,8	7,98	99
3	2,5	8,3	7,98	128
4	2,5	9,2	7,98	160
5	2,5	10,1	7,98	199
6	2,5	11,1	7,98	239
7	2,5	11,1	7,98	255
8	2,5	12,1	7,98	298
9	2,5	14,4	7,98	347
10	2,5	14,4	7,98	363
12	2,5	14,9	7,98	419
14	2,5	15,8	7,98	481
16	2,5	16,8	7,98	548
18	2,5	17,9	7,98	628
20	2,5	18,9	7,98	696
24	2,5	21,5	7,98	831
25	2,5	21,5	7,98	880



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YSLYCY

Cu, Cl5, 300/500 V, 70 °C, Grey, PVC, PVC, PVC



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking Outer Diameter	PVC, acc. to TI2 Optional See the table
Inner Jacket	Material Color	PVC, acc. to TM2 Grey
Braid	Material Minimum Cover	0,16 mm tinned copper wires 85%
Outer Jacket	Material Marking Outer Diameter	PVC, acc. to TM2 Optional See the table
Rating	Nominal Voltage Temperature Range Test Voltage	300/500 V +70 °C 4 kV
Tests	Flame Retardant	IEC 60332-1
Reference Standart	Main	VDE 0245

Application

Flexible signal cable used for surveillance and control of static or mobile devices in industry, electric plants or offices. Lightweight and relatively thin, resistant to medium mechanical loads, used for fixed or limitedly mobile installations (not permanently mobile) without strain. Installed in dry or damp premises, outdoor application only under protection against UV-irradiation. Not intended for laying in ground or water.

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,5	6,7	39	72
3	0,5	7	39	81
4	0,5	7,4	39	93
5	0,5	7,9	39	108
6	0,5	8,4	39	122
7	0,5	8,4	39	125
8	0,5	9,2	39	148
9	0,5	10,5	39	170
10	0,5	10,5	39	174
12	0,5	10,9	39	192
14	0,5	11,3	39	214
16	0,5	12	39	241
18	0,5	12,6	39	285
20	0,5	13,2	39	295
24	0,5	14,5	39	341
25	0,5	14,5	39	354
2	0,75	7,1	26	82
3	0,75	7,4	26	95
4	0,75	7,9	26	110
5	0,75	8,4	26	128
6	0,75	9,2	26	155
7	0,75	9,2	26	160
8	0,75	9,9	26	173
9	0,75	11,5	26	211
10	0,75	11,5	26	216
12	0,75	11,9	26	242
14	0,75	12,4	26	266
16	0,75	13,1	26	303
18	0,75	13,7	26	356
20	0,75	14,5	26	369
24	0,75	15,8	26	420
25	0,75	15,8	26	438
2	1	7,5	19,5	92
3	1	7,8	19,5	108
4	1	8,4	19,5	125
5	1	9,2	19,5	156
6	1	9,9	19,5	173
7	1	9,9	19,5	179
8	1	10,6	19,5	202
9	1	12,4	19,5	246
10	1	12,4	19,5	252
12	1	12,8	19,5	284
14	1	13,4	19,5	320
16	1	14,2	19,5	362
18	1	14,9	19,5	424
20	1	15,6	19,5	432
24	1	17,4	19,5	524
25	1	17,4	19,5	546
2	1,5	8,1	13,3	111
3	1,5	8,6	13,3	134
4	1,5	9,3	13,3	163
5	1,5	10,1	13,3	194
6	1,5	11	13,3	222
7	1,5	11	13,3	231
8	1,5	12	13,3	266
9	1,5	13,9	13,3	327
10	1,5	13,9	13,3	337
12	1,5	14,3	13,3	374
14	1,5	15	13,3	421
16	1,5	15,7	13,3	466
18	1,5	16,5	13,3	525
20	1,5	17,6	13,3	591
2	2,5	9,6	7,98	161
3	2,5	10,1	7,98	187

Information Chart

Cu, Cl5, 300/500 V, 70 °C, Grey, PVC, PVC, PVC

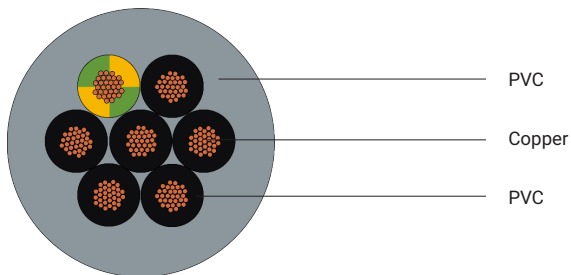
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
	2,5	11	7,98	227
5	2,5	12,1	7,98	279
6	2,5	13,1	7,98	333
7	2,5	13,1	7,98	349
8	2,5	14,3	7,98	398
9	2,5	16,6	7,98	490
10	2,5	16,6	7,98	506
12	2,5	17,1	7,98	565
14	2,5	18,2	7,98	648
2	4	10,8	4,95	202
3	4	11,5	4,95	254
4	4	12,4	4,95	308
5	4	13,6	4,95	379
6	4	14,9	4,95	453
7	4	14,9	4,95	478
8	4	16,2	4,95	556
9	4	18,9	4,95	665
10	4	18,9	4,95	691

H05VV5-F

Cu, Cl5, 300/500 V, 70 °C, Grey, PVC, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking Outer Diameter	PVC, acc. to TI2 Optional See the table
Outer Jacket	Material Marking Outer Diameter	PVC, acc. to TM5 Optional See the table
Rating	Nominal Voltage Temperature Range Test Voltage	300/500 V +70 °C 4 kV
Tests	Flame Retardant	IEC 60332-1
Reference Standart	Main Alternative	IEC 60227-73 VDE 0281

Application

Flexible signal cable used for surveillance and control of static or mobile devices in industry, electric plants or offices. Lightweight and relatively thin, resistant to oil and medium mechanical loads, used for fixed or limitedly mobile installations (not permanently mobile) without strain. Installed in dry or damp premises, outdoor application only under protection against UV-irradiation. Not intended for laying in ground or water.

Information Chart

Cu, Cl5, 300/500 V, 70 °C, Grey, PVC, PVC

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,5	6,2	39	50
3	0,5	6,6	39	61
4	0,5	7,3	39	75
5	0,5	8,1	39	92
6	0,5	8,7	39	110
7	0,5	8,7	39	113
8	0,5	9,6	39	135
9	0,5	11,3	39	158
10	0,5	11,3	39	162
12	0,5	11,7	39	183
14	0,5	12,4	39	209
16	0,5	13,1	39	232
18	0,5	13,8	39	265
20	0,5	14,7	39	286
24	0,5	16,3	39	339
25	0,5	16,3	39	361
2	0,75	6,5	26	57
3	0,75	7	26	73
4	0,75	7,7	26	88
5	0,75	8,5	26	113
6	0,75	9,3	26	131
7	0,75	9,3	26	136
8	0,75	10,2	26	161
9	0,75	11,9	26	186
10	0,75	11,9	26	191
12	0,75	12,4	26	220
14	0,75	13,1	26	248
16	0,75	13,9	26	280
18	0,75	14,7	26	320
20	0,75	15,6	26	346
24	0,75	17,4	26	414
25	0,75	17,4	26	441
2	1	7	19,5	67
3	1	7,5	19,5	83
4	1	8,2	19,5	103
5	1	9,1	19,5	132
6	1	9,9	19,5	151
7	1	9,9	19,5	157
8	1	10,8	19,5	187
9	1	12,8	19,5	218
10	1	12,8	19,5	224
12	1	13,4	19,5	259
14	1	14	19,5	292
16	1	14,9	19,5	330
18	1	15,8	19,5	377
20	1	16,9	19,5	411
24	1	18,8	19,5	492
25	1	18,8	19,5	523
2	1,5	7,4	13,3	80
3	1,5	8	13,3	103
4	1,5	8,7	13,3	126
5	1,5	9,6	13,3	161
6	1,5	10,6	13,3	188
7	1,5	10,6	13,3	197
8	1,5	11,6	13,3	234
9	1,5	13,7	13,3	271
10	1,5	13,7	13,3	281
12	1,5	14,2	13,3	322
14	1,5	15	13,3	369
16	1,5	15,9	13,3	417
18	1,5	17	13,3	479
20	1,5	18,1	13,3	524
24	1,5	20,4	13,3	635
25	1,5	20,4	13,3	674

H05VV5-F

Cu, Cl5, 300/500 V, 70 °C, Grey, PVC, PVC

Information Chart

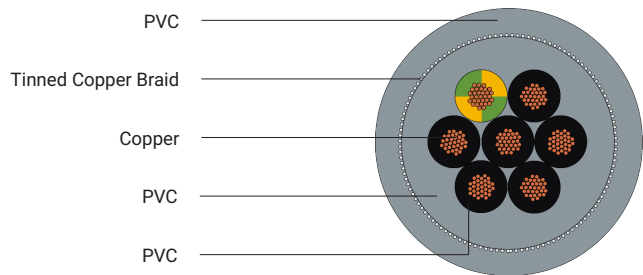
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	2,5	9	7,98	120
3	2,5	9,6	7,98	154
4	2,5	10,6	7,98	192
5	2,5	11,7	7,98	247
6	2,5	12,9	7,98	287
7	2,5	12,9	7,98	303
8	2,5	14,1	7,98	359
9	2,5	16,9	7,98	422
10	2,5	16,9	7,98	438
12	2,5	17,5	7,98	504
14	2,5	18,6	7,98	581
16	2,5	19,8	7,98	661
18	2,5	21,1	7,98	757
20	2,5	22,5	7,98	825
24	2,5	25,4	7,98	1008
25	2,5	25,4	7,98	1070
2	4	10,4	4,95	166
3	4	11,2	4,95	219
4	4	12,4	4,95	275
5	4	13,7	4,95	353
6	4	15	4,95	412
7	4	15	4,95	437
8	4	16,5	4,95	517
9	4	19,9	4,95	612
10	4	19,9	4,95	637
12	4	20,8	4,95	746
14	4	22,1	4,95	859
16	4	23,5	4,95	975



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H05VVC4V5-K

Cu, Cl5, 300/500 V, 70 °C, Grey, PVC, PVC, PVC



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking Outer Diameter	PVC, acc. to TI2 Optional See the table
Inner Jacket	Material Color	PVC, acc. to TM2 Grey
Braid	Material Minimum Cover	0,16 mm tinned copper wires 85%
Outer Jacket	Material Marking Outer Diameter	PVC, acc. to TM5 Optional See the table
Rating	Nominal Voltage Temperature Range Test Voltage	300/500 V +70 °C 4 kV
Tests	Flame Retardant	IEC 60332-1
Reference Standart	Main Alternative	IEC 60227-73 VDE 0281

Application

Flexible signal cable used for surveillance and control of static or mobile devices in industry, electric plants or offices. Lightweight and relatively thin, resistant to medium mechanical loads, used for fixed or limitedly mobile installations (not permanently mobile) without strain. Installed in dry or damp premises, outdoor application only under protection against UV-irradiation. Not intended for laying in ground or water.

H05VVC4V5-K

Cu, Cl5, 300/500 V, 70 °C, Grey, PVC, PVC, PVC

Information Chart

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,5	6,5	39	64
3	0,5	7	39	80
4	0,5	7,5	39	94
5	0,5	8,3	39	109
6	0,5	9,1	39	127
7	0,5	9,1	39	135
8	0,5	9,8	39	154
9	0,5	11,6	39	182
10	0,5	11,6	39	185
12	0,5	12	39	206
14	0,5	12,7	39	236
16	0,5	13,4	39	265
18	0,5	14,1	39	295
20	0,5	15	39	327
24	0,5	16,8	39	394
25	0,5	16,8	39	410
2	0,75	6,9	26	72
3	0,75	7,3	26	87
4	0,75	8	26	105
5	0,75	8,7	26	128
6	0,75	9,5	26	150
7	0,75	9,5	26	155
8	0,75	10,4	26	182
9	0,75	12,3	26	216
10	0,75	12,3	26	221
12	0,75	12,7	26	248
14	0,75	13,4	26	281
16	0,75	14,1	26	310
18	0,75	15	26	362
20	0,75	15,9	26	388
24	0,75	17,9	26	471
25	0,75	17,9	26	490
2	1	7,3	19,5	81
3	1	7,7	19,5	98
4	1	8,5	19,5	119
5	1	9,3	19,5	148
6	1	10,2	19,5	173
7	1	10,2	19,5	179
8	1	11,2	19,5	211
9	1	13,1	19,5	248
10	1	13,1	19,5	254
12	1	13,6	19,5	289
14	1	14,3	19,5	330
16	1	15,2	19,5	371
18	1	16,1	19,5	419
20	1	17,2	19,5	458
24	1	19,3	19,5	552
25	1	19,3	19,5	574
2	1,5	7,7	13,3	94
3	1,5	8,2	13,3	119
4	1,5	9,1	13,3	148
5	1,5	9,9	13,3	176
6	1,5	10,8	13,3	208
7	1,5	10,8	13,3	219
8	1,5	11,8	13,3	257
9	1,5	14	13,3	302
10	1,5	14	13,3	311
12	1,5	14,6	13,3	363
14	1,5	15,3	13,3	410
16	1,5	16,2	13,3	459
18	1,5	17,3	13,3	526
20	1,5	18,4	13,3	572

Information Chart

Cu, Cl5, 300/500 V, 70 °C, Grey, PVC, PVC, PVC

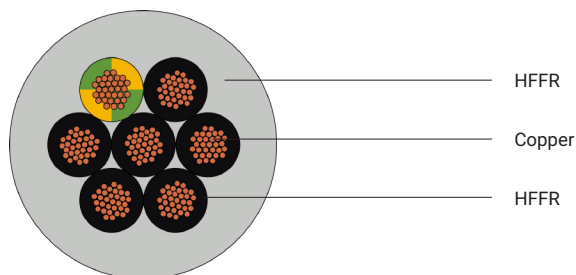
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	2,5	9,3	7,98	139
3	2,5	9,9	7,98	173
4	2,5	10,8	7,98	213
5	2,5	12	7,98	262
6	2,5	13,2	7,98	316
7	2,5	13,2	7,98	332
8	2,5	14,5	7,98	400
9	2,5	17,2	7,98	469
10	2,5	17,2	7,98	485
12	2,5	18	7,98	560
14	2,5	18,9	7,98	630
2	4	10,7	4,95	187
3	4	11,5	4,95	243
4	4	12,6	4,95	302
5	4	13,9	4,95	372
6	4	15,3	4,95	453
7	4	15,3	4,95	477
8	4	17	4,95	572

HSLH

Cu, Cl5, 300/500 V, 70 °C, Grey, HFFR, HFFR



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking Outer Diameter	XL HFFR Optional See the table
Outer Jacket	Material Marking Outer Diameter	XL HFFR Optional See the table
Rating	Nominal Voltage Temperature Range Test Voltage	300/500 V +70 °C 2 kV
Tests	Flame Retardant Halogen Free Low Smoke	IEC 60332-1-2 IEC 60754-1/2 IEC 61034-1/2
Reference Standart	Main	VDE 0245

Application

Halogen-free signal cable with improved properties under fire, suitable for different applications in control and measuring circuits, in industry and facilities where human lives or valuable property need to be protected against damages caused by fire. Suitable for fixed, same as for mobile installation, but free of mechanical stress; for dry and damp environment, not for outdoor application. Resistant to majority of most frequently used oils.

Information Chart

Cu, Cl5, 300/500 V, 70 °C, Grey, HFFR, HFFR

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,5	5	39	36
3	0,5	5,3	39	44
4	0,5	5,7	39	52
5	0,5	6,2	39	63
6	0,5	6,8	39	76
7	0,5	6,8	39	79
8	0,5	7,4	39	92
9	0,5	8,6	39	106
10	0,5	8,6	39	109
12	0,5	9	39	126
14	0,5	9,4	39	142
16	0,5	9,9	39	158
18	0,5	10,5	39	180
20	0,5	11,2	39	202
24	0,5	12,4	39	233
25	0,5	12,4	39	246
2	0,75	5,4	26	43
3	0,75	5,8	26	54
4	0,75	6,2	26	65
5	0,75	6,9	26	81
6	0,75	7,4	26	95
7	0,75	7,4	26	100
8	0,75	8,1	26	118
9	0,75	9,5	26	137
10	0,75	9,5	26	141
12	0,75	9,9	26	161
14	0,75	10,4	26	185
16	0,75	11	26	206
18	0,75	11,6	26	235
20	0,75	12,4	26	263
24	0,75	13,7	26	304
25	0,75	13,7	26	322
2	1	5,8	19,5	51
3	1	6,2	19,5	64
4	1	6,8	19,5	79
5	1	7,4	19,5	96
6	1	8,1	19,5	115
7	1	8,1	19,5	121
8	1	8,8	19,5	141
9	1	10,4	19,5	165
10	1	10,4	19,5	171
12	1	10,8	19,5	196
14	1	11,4	19,5	224
16	1	12	19,5	250
18	1	12,7	19,5	285
20	1	13,5	19,5	319
24	1	15	19,5	368
25	1	15	19,5	390
2	1,5	6,4	13,3	65
3	1,5	6,8	13,3	83
4	1,5	7,5	13,3	104
5	1,5	8,3	13,3	129
6	1,5	9	13,3	152
7	1,5	9	13,3	162
8	1,5	9,9	13,3	191
9	1,5	11,7	13,3	222
10	1,5	11,7	13,3	232
12	1,5	12,1	13,3	267
14	1,5	12,8	13,3	307
16	1,5	13,5	13,3	344
18	1,5	14,3	13,3	391
20	1,5	15,2	13,3	438
24	1,5	16,9	13,3	506
25	1,5	16,9	13,3	535

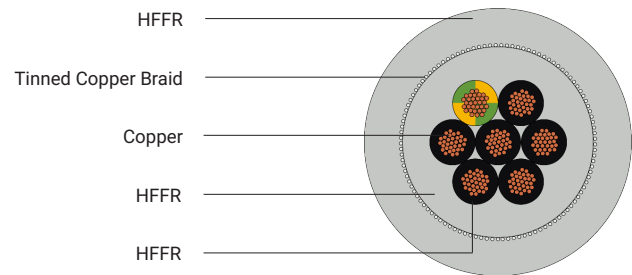
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	2,5	7,8	7,98	99
3	2,5	8,3	7,98	128
4	2,5	9,2	7,98	160
5	2,5	10,1	7,98	199
6	2,5	11,1	7,98	239
7	2,5	11,1	7,98	255
8	2,5	12,1	7,98	298
9	2,5	14,4	7,98	347
10	2,5	14,4	7,98	363
12	2,5	14,9	7,98	419
14	2,5	15,8	7,98	481
16	2,5	16,8	7,98	548
18	2,5	17,9	7,98	628
20	2,5	18,9	7,98	696
24	2,5	21,5	7,98	831
25	2,5	21,5	7,98	880



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HSLHCH

Cu, Cl5, 300/500 V, 70 °C, Grey, HFFR, HFFR, HFFR



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking Outer Diameter	XL HFFR Optional See the table
Inner Jacket	Material Color	XL HFFR Grey
Braid	Material Minimum Cover	0,16 mm tinned copper wires 85%
Outer Jacket	Material Marking Outer Diameter	XL HFFR Optional See the table
Rating	Nominal Voltage Temperature Range Test Voltage	300/500 V +70 °C 4 kV
Tests	Flame Retardant Halogen Free Low Smoke	IEC 60332-1-2 IEC 60754-1/2 IEC 61034-1/2
Reference Standart	Main	VDE 0245

Application

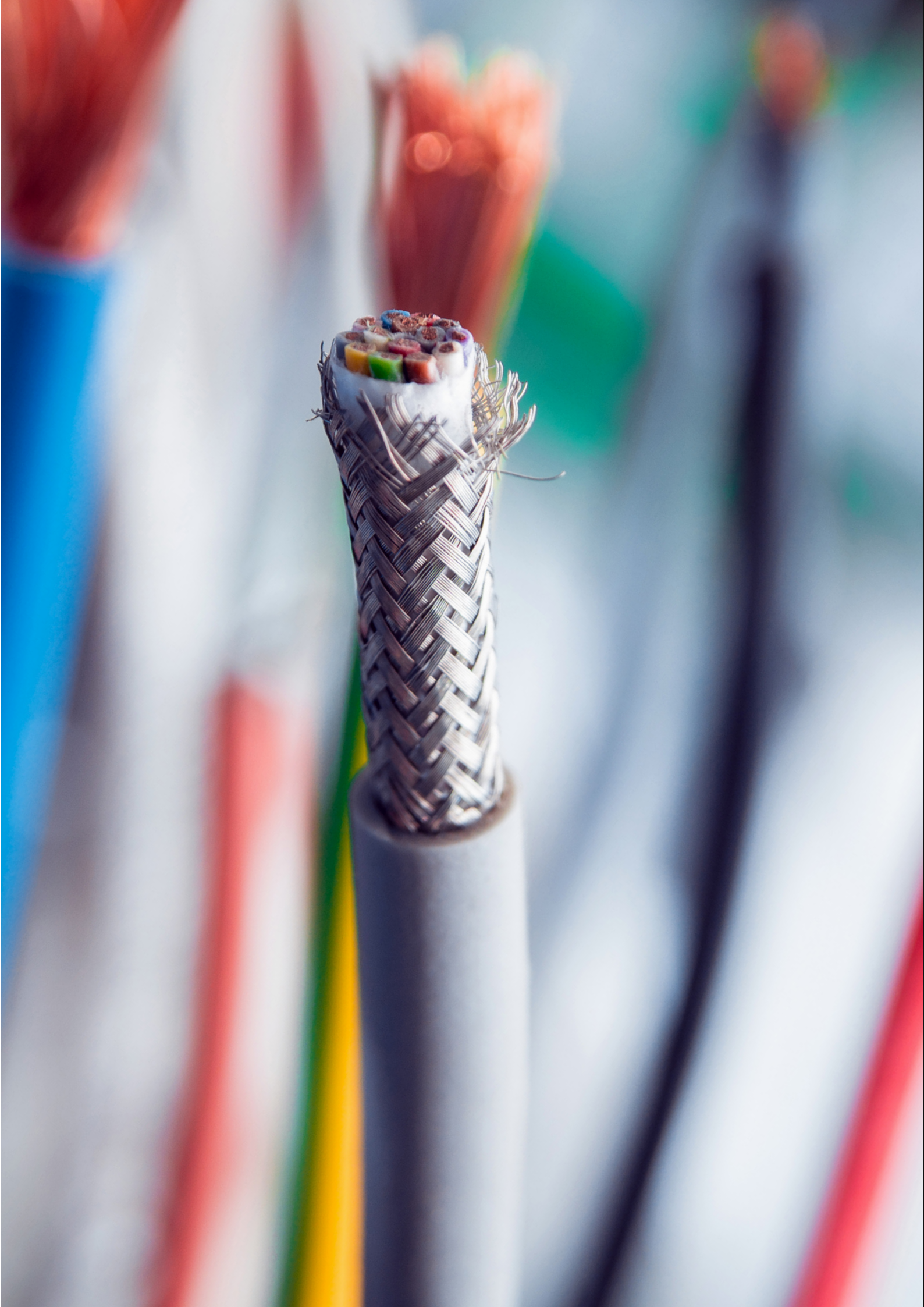
Halogen-free signal cable with improved properties under fire, suitable for different applications in control and measuring circuits, in industry and facilities where human lives or valuable property need to be protected against damages caused by fire. Suitable for fixed, same as for mobile installation, but free of mechanical stress; for dry and damp environment, not for outdoor application. Resistant to majority of most frequently used oils.

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,5	6,7	39	69
3	0,5	7	39	78
4	0,5	7,4	39	89
5	0,5	7,9	39	104
6	0,5	8,4	39	117
7	0,5	8,4	39	120
8	0,5	9,2	39	142
9	0,5	10,5	39	163
10	0,5	10,5	39	166
12	0,5	10,9	39	184
14	0,5	11,3	39	204
16	0,5	12	39	230
18	0,5	12,6	39	270
20	0,5	13,2	39	281
24	0,5	14,5	39	326
25	0,5	14,5	39	338
2	0,75	7,1	26	79
3	0,75	7,4	26	91
4	0,75	7,9	26	106
5	0,75	8,4	26	121
6	0,75	9,2	26	149
7	0,75	9,2	26	154
8	0,75	9,9	26	166
9	0,75	11,5	26	203
10	0,75	11,5	26	208
12	0,75	11,9	26	232
14	0,75	12,4	26	255
16	0,75	13,1	26	290
18	0,75	13,7	26	339
20	0,75	14,5	26	353
24	0,75	15,8	26	403
25	0,75	15,8	26	419
2	1	7,5	19,5	89
3	1	7,8	19,5	104
4	1	8,4	19,5	121
5	1	9,2	19,5	150
6	1	9,9	19,5	166
7	1	9,9	19,5	172
8	1	10,6	19,5	194
9	1	12,4	19,5	236
10	1	12,4	19,5	242
12	1	12,8	19,5	273
14	1	13,4	19,5	307
16	1	14,2	19,5	347
18	1	14,9	19,5	403
20	1	15,6	19,5	413
24	1	17,4	19,5	503
25	1	17,4	19,5	523
2	1,5	8,1	13,3	107
3	1,5	8,6	13,3	130
4	1,5	9,3	13,3	158
5	1,5	10,1	13,3	187
6	1,5	11	13,3	213
7	1,5	11	13,3	223
8	1,5	12	13,3	256
9	1,5	13,9	13,3	315
10	1,5	13,9	13,3	325
12	1,5	14,3	13,3	361
14	1,5	15	13,3	406
16	1,5	15,7	13,3	449
18	1,5	16,5	13,3	504
20	1,5	17,6	13,3	569

Information Chart

Cu, CI5, 300/500 V, 70 °C, Grey, HFFR, HFFR, HFFR

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	2,5	9,6	7,98	156
3	2,5	10,1	7,98	181
4	2,5	11	7,98	220
5	2,5	12,1	7,98	269
6	2,5	13,1	7,98	321
7	2,5	13,1	7,98	337
8	2,5	14,3	7,98	384
9	2,5	16,6	7,98	473
10	2,5	16,6	7,98	489
12	2,5	17,1	7,98	546
14	2,5	18,2	7,98	626
16	2,5	19	7,98	694
2	4	10,8	4,95	196
3	4	11,5	4,95	247
4	4	12,4	4,95	299
5	4	13,6	4,95	367
6	4	14,9	4,95	437
7	4	14,9	4,95	464
8	4	16,2	4,95	540



Electronic cables

They are designed for general usage in electronic devices. Small outside diameter and flexibility are main benefits. Rated voltage is 250 V. They are not suitable for supplying power to devices.

Cables can be redesigned with different materials according to customer needs such as oil, abrasion resistance, increased flexibility. Tinned copper variations are also available.

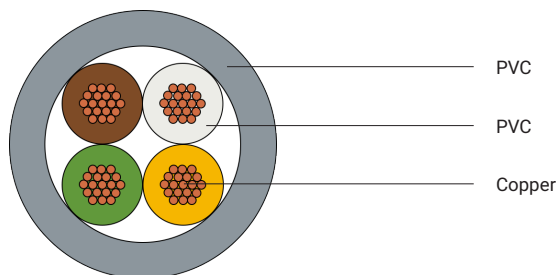
CPR, DOP documents and approvals are available.

LiYY

Cu, Cl5, 250 V, 70 °C, Grey, PVC, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking	PVC, acc. to TI2 Color coded
Outer Jacket	Material Color Outer Diameter	PVC, acc. to TM2 Grey See the table
Rating	Nominal Voltage Temperature Range Test Voltage	250 V +70 °C 1500 V
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	TSE, CPR
Reference Standart	Main Alternative	TSE 13755 VDE 0812

Application

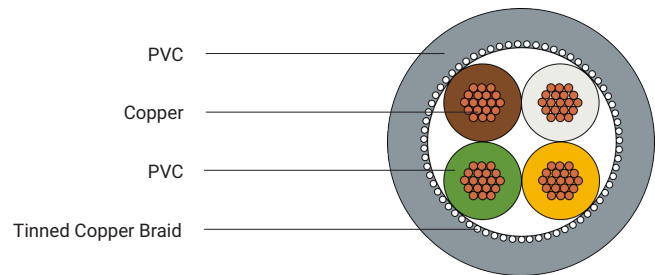
General use of electronics, measuring-, signal, control-, and regulation technology as well as call plants and data processing. High flexibility and small outside diameter characterise this cable.

Information Chart

Cu, Cl5, 250 V, 70 °C, Grey, PVC, PVC

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,22	3,5	85	15
3	0,22	3,7	85	19
4	0,22	4	85	23
5	0,22	4,5	85	29
6	0,22	4,9	85	35
7	0,22	4,9	85	37
8	0,22	5,5	85	46
9	0,22	5,8	85	50
10	0,22	6,3	85	54
12	0,22	6,6	85	63
14	0,22	7	85	72
16	0,22	7,3	85	80
18	0,22	7,7	85	91
19	0,22	7,8	85	93
20	0,22	8,2	85	98
21	0,22	8,3	85	104
24	0,22	9,1	85	117
25	0,22	9,1	85	123
2	0,5	4,9	39	29
3	0,5	5,2	39	37
4	0,5	5,6	39	45
5	0,5	6,2	39	57
6	0,5	6,7	39	67
7	0,5	6,7	39	70
8	0,5	7,4	39	86
9	0,5	8,6	39	98
10	0,5	8,6	39	101
12	0,5	9	39	118
14	0,5	9,5	39	136
16	0,5	10	39	152
18	0,5	10,6	39	174
19	0,5	10,6	39	177
20	0,5	11,2	39	198
21	0,5	11,2	39	204
24	0,5	12,5	39	226
25	0,5	12,5	39	239
2	0,75	5,3	26	35
3	0,75	5,6	26	46
4	0,75	6,1	26	57
5	0,75	6,7	26	72
6	0,75	7,3	26	85
7	0,75	7,3	26	90
8	0,75	8,1	26	110
9	0,75	9,4	26	125
10	0,75	9,4	26	130
12	0,75	9,8	26	152
14	0,75	10,4	26	175
16	0,75	10,9	26	196
18	0,75	11,6	26	225
19	0,75	11,6	26	229
20	0,75	12,2	26	256
21	0,75	12,2	26	264
24	0,75	13,7	26	292
25	0,75	13,7	26	310
2	1	5,7	19,5	41
3	1	6	19,5	54
4	1	6,7	19,5	69
5	1	7,4	19,5	87
6	1	8	19,5	104
7	1	8	19,5	110
8	1	8,8	19,5	133
9	1	10,3	19,5	151
10	1	10,3	19,5	158
12	1	10,7	19,5	185

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
14	1	11,4	19,5	213
16	1	12	19,5	239
18	1	12,7	19,5	273
19	1	12,7	19,5	279
20	1	13,4	19,5	312
21	1	13,4	19,5	322
24	1	14,9	19,5	355
25	1	14,9	19,5	373
2	1,5	6,4	13,3	55
3	1,5	6,8	13,3	73
4	1,5	7,5	13,3	93
5	1,5	8,3	13,3	118
6	1,5	9	13,3	141
7	1,5	9	13,3	151
8	1,5	9,9	13,3	182
9	1,5	11,6	13,3	206
10	1,5	11,6	13,3	216
12	1,5	12,1	13,3	254
14	1,5	12,8	13,3	293
16	1,5	13,5	13,3	329
18	1,5	14,3	13,3	376
19	1,5	14,3	13,3	386
20	1,5	15,1	13,3	430
21	1,5	15,1	13,3	442
24	1,5	16,9	13,3	490
25	1,5	16,9	13,3	519



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking	PVC, acc. to TI2 Color coded
Braid	Material Minimum Cover	0,16 mm tinned copper wires 85%
Outer Jacket	Material Color Outer Diameter	PVC, acc. to TM2 Grey See the table
Rating	Nominal Voltage Temperature Range Test Voltage	250 V +70 °C 1500 V
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	TSE, CPR
Reference Standart	Main Alternative	TSE 13755 VDE 0812

Application

General use of electronics, measuring-, signal, control-, and regulation technology as well as call plants and data processing. High flexibility and small outside diameter characterise this cable.

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,22	3,7	85	20
3	0,22	3,9	85	24
4	0,22	4,2	85	29
5	0,22	4,7	85	36
6	0,22	5,1	85	42
7	0,22	5,1	85	45
8	0,22	5,7	85	52
9	0,22	6	85	58
10	0,22	6,5	85	63
12	0,22	6,8	85	73
14	0,22	7,2	85	83
16	0,22	7,5	85	92
18	0,22	8	85	102
19	0,22	8	85	106
20	0,22	8,3	85	111
21	0,22	8,3	85	114
24	0,22	9,3	85	135
25	0,22	9,3	85	138
2	0,5	5,1	39	37
3	0,5	5,4	39	45
4	0,5	5,8	39	53
5	0,5	6,4	39	66
6	0,5	6,9	39	78
7	0,5	6,9	39	81
8	0,5	7,6	39	98
9	0,5	8,8	39	110
10	0,5	8,8	39	114
12	0,5	9,2	39	135
14	0,5	9,7	39	155
16	0,5	10,2	39	171
18	0,5	10,7	39	188
19	0,5	10,7	39	192
20	0,5	11,4	39	211
21	0,5	11,4	39	211
24	0,5	12,6	39	242
25	0,5	12,6	39	256
2	0,75	5,5	26	44
3	0,75	5,8	26	54
4	0,75	6,3	26	66
5	0,75	6,9	26	82
6	0,75	7,5	26	97
7	0,75	7,5	26	102
8	0,75	8,3	26	123
9	0,75	9,6	26	141
10	0,75	9,6	26	147
12	0,75	10	26	171
14	0,75	10,6	26	192
16	0,75	11,1	26	214
18	0,75	11,8	26	244
19	0,75	11,8	26	248
20	0,75	12,6	26	276
21	0,75	12,6	26	278
24	0,75	13,8	26	318
25	0,75	13,8	26	333
2	1	5,9	19,5	50
3	1	6,2	19,5	63
4	1	6,6	19,5	76
5	1	7,5	19,5	97
6	1	8,2	19,5	119
7	1	8,2	19,5	126
8	1	9,1	19,5	151
9	1	10,5	19,5	168
10	1	10,5	19,5	174
12	1	10,9	19,5	202

Information Chart

Cu, Cl5, 250 V, 70 °C, Grey, PVC, PVC

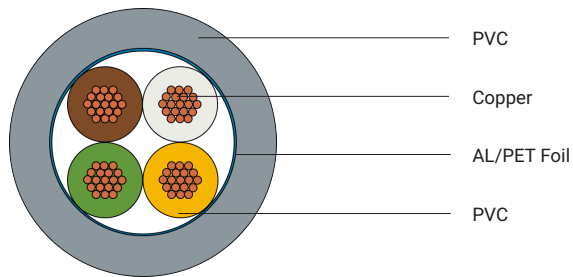
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
12	1	10,9	19,5	202
14	1	11,6	19,5	231
16	1	12,2	19,5	258
18	1	12,9	19,5	298
19	1	12,9	19,5	304
20	1	13,6	19,5	329
21	1	13,6	19,5	331
24	1	15,1	19,5	379
25	1	15,1	19,5	401
2	1,5	6,6	13,3	65
3	1,5	7	13,3	83
4	1,5	7,7	13,3	105
5	1,5	8,5	13,3	131
6	1,5	9,2	13,3	158
7	1,5	9,2	13,3	168
8	1,5	10,1	13,3	198
9	1,5	11,8	13,3	223
10	1,5	11,8	13,3	234
12	1,5	12,3	13,3	273
14	1,5	13	13,3	317
16	1,5	13,7	13,3	355
18	1,5	14,4	13,3	400
19	1,5	14,4	13,3	410
20	1,5	15,3	13,3	447
21	1,5	15,3	13,3	451
24	1,5	17,1	13,3	521
25	1,5	17,1	13,3	551

LiY(St)Y

Cu, Cl5, 250 V, 70 °C, Grey, PVC, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking	PVC, acc. to TI2 Color coded
Drain Wire	Material	Solid copper wire
Screen	Material	AL/PET foil
Outer Jacket	Material Color Outer Diameter	PVC, acc. to TM2 Grey See the table
Rating	Nominal Voltage Temperature Range Test Voltage	250 V +70 °C 1500 V
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	TSE
Reference Standart	Main Alternative	TSE 13755 VDE 0812

Application

General use of electronics, measuring-, signal, control-, and regulation technology as well as call plants and data processing. High flexibility, small outside diameter and good electromagnetic interference characterise this cable.

Information Chart

Cu, Cl5, 250 V, 70 °C, Grey, PVC, PVC

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,22	4	85	19
3	0,22	4,2	85	23
4	0,22	4,5	85	28
5	0,22	4,9	85	33
6	0,22	5,3	85	38
7	0,22	5,3	85	41
8	0,22	5,8	85	47
9	0,22	6,2	85	53
10	0,22	6,7	85	58
12	0,22	6,9	85	66
14	0,22	7,3	85	75
16	0,22	7,7	85	85
18	0,22	8,1	85	93
19	0,22	8,1	85	97
20	0,22	8,6	85	104
21	0,22	8,6	85	107
24	0,22	9,5	85	123
25	0,22	9,5	85	127
2	0,5	5,3	39	33
3	0,5	5,6	39	41
4	0,5	6	39	49
5	0,5	6,5	39	60
6	0,5	7,1	39	72
7	0,5	7,1	39	75
8	0,5	7,8	39	92
9	0,5	8,9	39	103
10	0,5	9	39	107
12	0,5	9,4	39	124
14	0,5	9,9	39	142
16	0,5	10,4	39	158
18	0,5	10,9	39	178
19	0,5	10,9	39	181
20	0,5	11,6	39	199
21	0,5	11,6	39	200
24	0,5	12,7	39	227
25	0,5	12,9	39	247
2	0,75	5,9	26	44
3	0,75	6,2	26	54
4	0,75	6,8	26	67
5	0,75	7,5	26	83
6	0,75	8	26	97
7	0,75	8	26	102
8	0,75	8,8	26	122
9	0,75	10,1	26	138
10	0,75	10,1	26	144
12	0,75	10,5	26	166
14	0,75	11,1	26	190
16	0,75	11,7	26	211
18	0,75	12,3	26	241
19	0,75	12,3	26	245
20	0,75	13	26	265
21	0,75	13	26	268
24	0,75	14,4	26	310
25	0,75	14,4	26	328
2	1	6,3	19,5	50
3	1	6,7	19,5	63
4	1	7,3	19,5	78
5	1	8	19,5	97
6	1	8,6	19,5	114
7	1	8,6	19,5	120
8	1	9,5	19,5	144
9	1	10,9	19,5	163
10	1	10,9	19,5	170
12	1	11,4	19,5	197

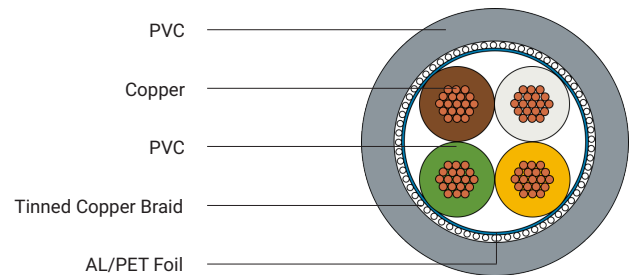
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
14	1	12	19,5	225
16	1	12,6	19,5	252
18	1	13,3	19,5	287
19	1	13,3	19,5	293
20	1	14	19,5	317
21	1	14	19,5	320
24	1	15,5	19,5	366
25	1	15,5	19,5	388
2	1,5	7	13,3	64
3	1,5	7,4	13,3	82
4	1,5	8,1	13,3	103
5	1,5	8,9	13,3	129
6	1,5	9,6	13,3	151
7	1,5	9,6	13,3	161
8	1,5	10,6	13,3	193
9	1,5	12,2	13,3	219
10	1,5	12,2	13,3	229
12	1,5	12,7	13,3	267
14	1,5	13,4	13,3	306
16	1,5	14,1	13,3	343
18	1,5	14,9	13,3	391
19	1,5	14,9	13,3	401
20	1,5	15,7	13,3	433
21	1,5	15,7	13,3	438
24	1,5	17,5	13,3	506
25	1,5	17,5	13,3	535



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LiY(St)CY

Cu, Cl5, 250 V, 70 °C, Grey, PVC, PVC



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking	PVC, acc. to TI2 Color coded
Drain Wire	Material	Solid copper wire
Screen	Material	AL/PET foil
Braid	Material Minimum Cover	0,16 mm tinned copper wires 85%
Outer Jacket	Material Color Outer Diameter	PVC, acc. to TM2 Grey See the table
Rating	Nominal Voltage Temperature Range Test Voltage	250 V +70 °C 1500 V
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	TSE
Reference Standart	Main Alternative	TSE 13755 VDE 0812

Application

General use of electronics, measuring-, signal, control-, and regulation technology as well as call plants and data processing. High flexibility, small outside diameter and good electromagnetic interference characterise this cable.

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,22	3,8	20	85
3	0,22	4	24	85
4	0,22	4,4	29	85
5	0,22	4,7	35	85
6	0,22	5,2	41	85
7	0,22	5,2	44	85
8	0,22	5,6	49	85
9	0,22	5,9	55	85
10	0,22	6,5	61	85
12	0,22	6,9	73	85
14	0,22	7,1	79	85
16	0,22	7,4	87	85
18	0,22	7,8	96	85
19	0,22	7,8	99	85
20	0,22	8,2	105	85
21	0,22	8,2	108	85
24	0,22	9,1	125	85
25	0,22	9,1	128	85
2	0,5	5	34	39
3	0,5	5,3	41	39
4	0,5	5,8	52	39
5	0,5	6,4	64	39
6	0,5	6,9	76	39
7	0,5	6,9	79	39
8	0,5	7,5	94	39
9	0,5	8,8	110	39
10	0,5	8,8	113	39
12	0,5	9,2	131	39
14	0,5	9,7	149	39
16	0,5	10,2	166	39
18	0,5	10,8	188	39
19	0,5	10,8	192	39
20	0,5	11,4	208	39
21	0,5	11,4	209	39
24	0,5	12,7	242	39
25	0,5	12,7	256	39
2	0,75	5,6	43	26
3	0,75	5,9	54	26
4	0,75	6,5	67	26
5	0,75	7,1	84	26
6	0,75	7,7	98	26
7	0,75	7,7	103	26
8	0,75	8,5	125	26
9	0,75	9,8	142	26
10	0,75	9,8	147	26
12	0,75	10,2	170	26
14	0,75	10,8	195	26
16	0,75	11,3	217	26
18	0,75	12	249	26
19	0,75	12	254	26
20	0,75	12,7	275	26
21	0,75	12,7	277	26
24	0,75	14	313	26
25	0,75	14	331	26
2	1	6	50	19,5
3	1	6,3	63	19,5
4	1	7	79	19,5
5	1	7,7	98	19,5
6	1	8,3	116	19,5
7	1	8,3	123	19,5
8	1	9,2	148	19,5
9	1	10,6	168	19,5
10	1	10,6	174	19,5
12	1	11	202	19,5

Information Chart

Cu, Cl5, 250 V, 70 °C, Grey, PVC, PVC

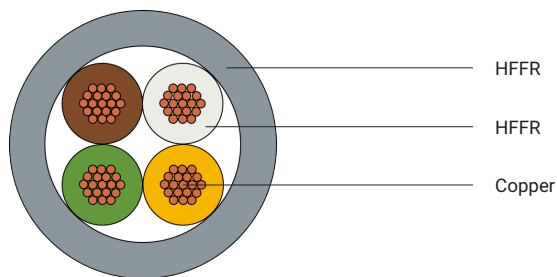
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
14	1	11,7	234	19,5
16	1	12,3	261	19,5
18	1	13	293	19,5
19	1	13	299	19,5
20	1	13,7	326	19,5
21	1	13,7	329	19,5
24	1	15,2	377	19,5
25	1	15,2	400	19,5
2	1,5	6,7	64	13,3
3	1,5	7,1	83	13,3
4	1,5	7,8	105	13,3
5	1,5	8,6	131	13,3
6	1,5	9,3	155	13,3
7	1,5	9,3	165	13,3
8	1,5	10,2	197	13,3
9	1,5	11,9	224	13,3
10	1,5	11,9	234	13,3
12	1,5	12,4	276	13,3
14	1,5	13,1	316	13,3
16	1,5	13,8	352	13,3
18	1,5	14,6	401	13,3
19	1,5	14,6	411	13,3
20	1,5	15,4	445	13,3
21	1,5	15,4	448	13,3
24	1,5	17,2	518	13,3
25	1,5	17,2	548	13,3

LiHH

Cu, Cl5, 250 V, 70 °C, Grey, HFFR, HFFR



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking	HFFR, acc. to HJ2 Color coded
Outer Jacket	Material Color Outer Diameter	HFFR, acc. to HM2 Grey See the table
Rating	Nominal Voltage Temperature Range Test Voltage	250 V +70 °C 1500 V
Tests	Flame Retardant Halogen Free Low Smoke	IEC 60332-1-2 and IEC 60332-3-24 Cat.C IEC 60754-1/2 IEC 61034-1/2
Approvals	Certificates Available	TSE, CPR
Reference Standart	Main Alternative	TSE 13734 VDE 0812

Application

General use of electronics, measuring-, signal, control-, and regulation technology as well as call plants and data processing. High flexibility, small outside diameter and halogen free structure characterise this cable.

Information Chart

Cu, Cl5, 250 V, 70 °C, Grey, HFFR, HFFR

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,22	3,6	85	15
3	0,22	3,8	85	19
4	0,22	4,1	85	23
5	0,22	4,5	85	28
6	0,22	4,9	85	33
7	0,22	4,9	85	36
8	0,22	5,5	85	43
9	0,22	5,8	85	47
10	0,22	6,3	85	52
12	0,22	6,6	85	60
14	0,22	7	85	70
16	0,22	7,3	85	77
18	0,22	7,7	85	85
19	0,22	7,8	85	90
20	0,22	8,2	85	95
21	0,22	8,2	85	98
24	0,22	9,1	85	113
25	0,22	9,1	85	116
2	0,5	4,9	39	28
3	0,5	5,2	39	36
4	0,5	5,6	39	44
5	0,5	6,2	39	53
6	0,5	6,7	39	64
7	0,5	6,7	39	68
8	0,5	7,4	39	83
9	0,5	8,6	39	94
10	0,5	8,6	39	98
12	0,5	9	39	114
14	0,5	9,5	39	131
16	0,5	10	39	146
18	0,5	10,6	39	166
19	0,5	10,6	39	170
20	0,5	11,2	39	184
21	0,5	11,2	39	194
24	0,5	12,5	39	217
25	0,5	12,5	39	226
2	0,75	5,3	26	35
3	0,75	5,6	26	45
4	0,75	6,1	26	55
5	0,75	6,7	26	69
6	0,75	7,3	26	82
7	0,75	7,3	26	87
8	0,75	8,1	26	106
9	0,75	9,4	26	120
10	0,75	9,4	26	126
12	0,75	9,8	26	147
14	0,75	10,4	26	169
16	0,75	10,9	26	189
18	0,75	11,6	26	216
19	0,75	11,6	26	221
20	0,75	12,2	26	239
21	0,75	12,4	26	259
24	0,75	13,7	26	282
25	0,75	13,7	26	294
2	1	5,7	19,5	40
3	1	6	19,5	52
4	1	6,7	19,5	67
5	1	7,4	19,5	84
6	1	8	19,5	100
7	1	8	19,5	106
8	1	8,8	19,5	128
9	1	10,3	19,5	146
10	1	10,3	19,5	152
12	1	10,7	19,5	178

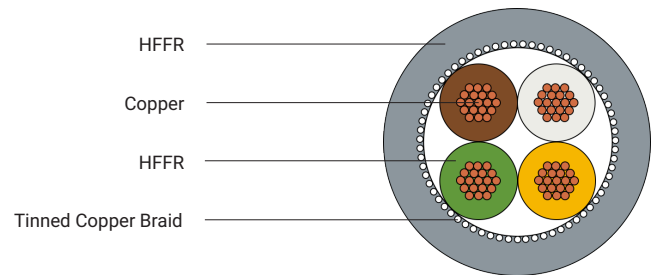
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
14	1	11,4	19,5	205
16	1	12	19,5	230
18	1	12,7	19,5	262
19	1	12,7	19,5	269
20	1	13,4	19,5	291
21	1	13,5	19,5	310
24	1	14,9	19,5	338
25	1	14,9	19,5	353
2	1,5	6,4	13,3	54
3	1,5	6,8	13,3	71
4	1,5	7,5	13,3	91
5	1,5	8,3	13,3	112
6	1,5	9	13,3	136
7	1,5	9	13,3	146
8	1,5	9,9	13,3	175
9	1,5	11,6	13,3	200
10	1,5	11,6	13,3	210
12	1,5	12,1	13,3	246
14	1,5	12,8	13,3	284
16	1,5	13,5	13,3	319
18	1,5	14,3	13,3	363
19	1,5	14,3	13,3	374
20	1,5	15,1	13,3	403
21	1,5	15,1	13,3	425
24	1,5	16,9	13,3	475
25	1,5	16,9	13,3	495



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LiHCH

Cu, Cl5, 250 V, 70 °C, Grey, HFFR, HFFR



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking	HFFR, acc. to HJ2 Color coded
Braid	Material Minimum Cover	0,16 mm tinned copper wires 85%
Outer Jacket	Material Color Outer Diameter	HFFR, acc. to HM2 Grey See the table
Rating	Nominal Voltage Temperature Range Test Voltage	250 V +70 °C 1500 V
Tests	Flame Retardant Halogen Free Low Smoke Corrosive Gas	IEC 60332-1-2 IEC 60754-1 IEC 61034-2 IEC 60754-2
Approvals	Certificates Available	CPR
Reference Standart	Main Alternative	TSE 13734 VDE 0812

Application

General use of electronics, measuring-, signal, control-, and regulation technology as well as call plants and data processing. High flexibility, small outside diameter and halogen free structure characterise this cable.

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,22	3,7	85	20
3	0,22	3,9	85	24
4	0,22	4,2	85	29
5	0,22	4,7	85	35
6	0,22	5,1	85	41
7	0,22	5,1	85	44
8	0,22	5,7	85	51
9	0,22	6	85	57
10	0,22	6,5	85	61
12	0,22	6,8	85	71
14	0,22	7,2	85	81
16	0,22	7,5	85	89
18	0,22	7,9	85	98
19	0,22	8	85	103
20	0,22	8,4	85	108
21	0,22	8,4	85	111
24	0,22	9,3	85	131
25	0,22	9,3	85	134
2	0,5	5,1	39	37
3	0,5	5,4	39	44
4	0,5	5,8	39	52
5	0,5	6,4	39	63
6	0,5	6,9	39	75
7	0,5	6,9	39	79
8	0,5	7,6	39	94
9	0,5	8,8	39	107
10	0,5	8,8	39	111
12	0,5	9,2	39	130
14	0,5	9,7	39	149
16	0,5	10,2	39	165
18	0,5	10,8	39	183
19	0,5	10,8	39	187
20	0,5	11,4	39	202
21	0,5	11,4	39	203
24	0,5	12,7	39	236
25	0,5	12,7	39	248
2	0,75	5,5	26	43
3	0,75	5,8	26	53
4	0,75	6,3	26	65
5	0,75	6,9	26	80
6	0,75	7,5	26	94
7	0,75	7,5	26	99
8	0,75	8,3	26	119
9	0,75	9,6	26	137
10	0,75	9,6	26	143
12	0,75	10	26	166
14	0,75	10,6	26	186
16	0,75	11,1	26	207
18	0,75	11,8	26	235
19	0,75	11,8	26	240
20	0,75	12,5	26	263
21	0,75	12,5	26	266
24	0,75	13,9	26	307
25	0,75	13,9	26	323
2	1	5,9	19,5	50
3	1	6,2	19,5	62
4	1	6,6	19,5	75
5	1	7,5	19,5	94
6	1	8,2	19,5	116
7	1	8,2	19,5	122
8	1	9,1	19,5	146
9	1	10,5	19,5	162
10	1	10,5	19,5	169
12	1	10,9	19,5	195

Information Chart

Cu, Cl5, 250 V, 70 °C, Grey, HFFR, HFFR

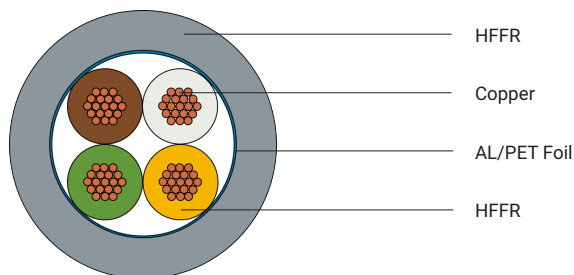
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
14	1	11,6	19,5	223
16	1	12,2	19,5	249
18	1	12,9	19,5	287
19	1	12,9	19,5	293
20	1	13,6	19,5	316
21	1	13,6	19,5	320
24	1	15,1	19,5	366
25	1	15,1	19,5	386
2	1,5	6,6	13,3	64
3	1,5	7	13,3	81
4	1,5	7,7	13,3	102
5	1,5	8,4	13,3	126
6	1,5	9,2	13,3	153
7	1,5	9,2	13,3	163
8	1,5	10,1	13,3	187
9	1,5	11,7	13,3	214
10	1,5	11,8	13,3	228
12	1,5	12,3	13,3	265
14	1,5	13	13,3	309
16	1,5	13,7	13,3	345
18	1,5	14,5	13,3	391
19	1,5	14,5	13,3	402
20	1,5	15,3	13,3	432
21	1,5	15,3	13,3	438
24	1,5	17,1	13,3	506
25	1,5	17,1	13,3	533

LiH(St)H

Cu, Cl5, 250 V, 70 °C, Grey, HFFR, HFFR



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking	HFFR, acc. to HJ2 Color coded
Drain Wire	Material	Solid copper wire
Screen	Material	AL/PET foil
Outer Jacket	Material Color Outer Diameter	HFFR, acc. to HM2 Grey See the table
Rating	Nominal Voltage Temperature Range Test Voltage	250 V +70 °C 1500 V
Tests	Flame Retardant Halogen Free Low Smoke	IEC 60332-1-2 and IEC 60332-3-24 Cat.C IEC 60754-1/2 IEC 61034-1/2
Approvals	Certificates Available	TSE
Reference Standart	Main Alternative	TSE 13734 VDE 0812

Application

General use of electronics, measuring-, signal, control-, and regulation technology as well as call plants and data processing. High flexibility, small outside diameter and good electromagnetic interference, halogen free structure characterise this cable.

Information Chart

Cu, Cl5, 250 V, 70 °C, Grey, HFFR, HFFR

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,22	4	85	19
3	0,22	4,2	85	23
4	0,22	4,5	85	27
5	0,22	4,9	85	32
6	0,22	5,3	85	37
7	0,22	5,3	85	40
8	0,22	5,8	85	45
9	0,22	6,2	85	52
10	0,22	6,7	85	57
12	0,22	6,9	85	64
14	0,22	7,3	85	73
16	0,22	7,7	85	82
18	0,22	8,1	85	90
19	0,22	8,1	85	93
20	0,22	8,6	85	100
21	0,22	8,6	85	103
24	0,22	9,5	85	119
25	0,22	9,5	85	122
2	0,5	5,3	39	33
3	0,5	5,6	39	40
4	0,5	6	39	48
5	0,5	6,5	39	58
6	0,5	7,1	39	69
7	0,5	7,1	39	73
8	0,5	7,8	39	88
9	0,5	9	39	100
10	0,5	9	39	103
12	0,5	9,4	39	120
14	0,5	9,9	39	137
16	0,5	10,4	39	152
18	0,5	10,9	39	170
19	0,5	10,9	39	174
20	0,5	11,6	39	191
21	0,5	11,6	39	192
24	0,5	12,7	39	218
25	0,5	12,9	39	236
2	0,75	5,9	26	43
3	0,75	6,2	26	53
4	0,75	6,8	26	66
5	0,75	7,5	26	81
6	0,75	8	26	94
7	0,75	8	26	99
8	0,75	8,8	26	118
9	0,75	10,1	26	134
10	0,75	10,1	26	139
12	0,75	10,5	26	161
14	0,75	11,1	26	184
16	0,75	11,7	26	205
18	0,75	12,3	26	232
19	0,75	12,3	26	237
20	0,75	13	26	255
21	0,75	13	26	259
24	0,75	14,4	26	300
25	0,75	14,4	26	315
2	1	6,3	19,5	49
3	1	6,7	19,5	62
4	1	7,3	19,5	76
5	1	8	19,5	94
6	1	8,6	19,5	110
7	1	8,6	19,5	116
8	1	9,5	19,5	139
9	1	10,9	19,5	158
10	1	10,9	19,5	165
12	1	11,4	19,5	191

LiH(St)H

Cu, Cl5, 250 V, 70 °C, Grey, HFFR, HFFR

Information Chart

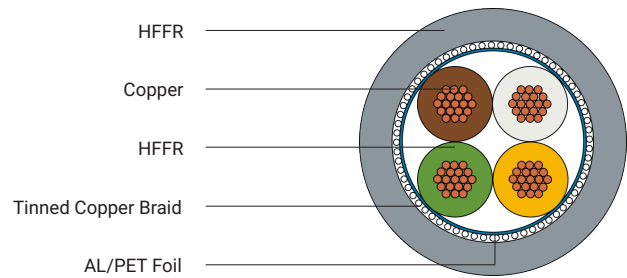
Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
14	1	12	19,5	218
16	1	12,6	19,5	243
18	1	13,3	19,5	276
19	1	13,3	19,5	283
20	1	14	19,5	305
21	1	14	19,5	308
24	1	15,5	19,5	353
25	1	15,5	19,5	373
2	1,5	7	13,3	63
3	1,5	7,4	13,3	81
4	1,5	8,1	13,3	101
5	1,5	8,9	13,3	125
6	1,5	9,6	13,3	147
7	1,5	9,6	13,3	157
8	1,5	10,6	13,3	187
9	1,5	12,2	13,3	213
10	1,5	12,2	13,3	223
12	1,5	12,7	13,3	260
14	1,5	13,4	13,3	298
16	1,5	14,1	13,3	334
18	1,5	14,9	13,3	378
19	1,5	14,9	13,3	389
20	1,5	15,7	13,3	419
21	1,5	15,7	13,3	425
24	1,5	17,5	13,3	491
25	1,5	17,5	13,3	517



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LiH(St)CH

Cu, Cl5, 250 V, 70 °C, Grey, HFFR, HFFR



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking	HFFR, acc. to HJ2 Color coded
Drain Wire	Material	Solid copper wire
Screen	Material	AL/PET foil
Braid	Material Minimum Cover	0,16 mm tinned copper wires 85%
Outer Jacket	Material Color Outer Diameter	HFFR, acc. to HM2 Grey See the table
Rating	Nominal Voltage Temperature Range Test Voltage	250 V +70 °C 1500 V
Tests	Flame Retardant Halogen Free Low Smoke	IEC 60332-1-2 and IEC 60332-3-24 Cat.C IEC 60754-1/2 IEC 61034-1/2
Approvals	Certificates Available	TSE
Reference Standart	Main Alternative	TSE 13734 VDE 0812

Application

General use of electronics, measuring-, signal, control-, and regulation technology as well as call plants and data processing. High flexibility, small outside diameter and good electromagnetic interference, halogen free structure characterise this cable.

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
2	0,22	3,8	85	20
3	0,22	4	85	23
4	0,22	4,4	85	29
5	0,22	4,7	85	34
6	0,22	5,2	85	40
7	0,22	5,2	85	43
8	0,22	5,6	85	47
9	0,22	5,9	85	53
10	0,22	6,5	85	59
12	0,22	6,8	85	68
14	0,22	7,1	85	77
16	0,22	7,4	85	85
18	0,22	7,8	85	92
19	0,22	7,8	85	95
20	0,22	8,2	85	101
21	0,22	8,2	85	104
24	0,22	9,1	85	120
25	0,22	9,1	85	123
2	0,5	5	39	33
3	0,5	5,3	39	40
4	0,5	5,9	39	53
5	0,5	6,4	39	62
6	0,5	6,9	39	73
7	0,5	6,9	39	77
8	0,5	7,5	39	90
9	0,5	8,8	39	106
10	0,5	8,8	39	110
12	0,5	9,2	39	126
14	0,5	9,7	39	144
16	0,5	10,2	39	160
18	0,5	10,8	39	181
19	0,5	10,8	39	184
20	0,5	11,4	39	200
21	0,5	11,4	39	201
24	0,5	12,7	39	233
25	0,5	12,7	39	245
2	0,75	5,6	26	42
3	0,75	5,9	26	54
4	0,75	6,5	26	66
5	0,75	7,1	26	82
6	0,75	7,7	26	95
7	0,75	7,7	26	101
8	0,75	8,5	26	121
9	0,75	9,8	26	137
10	0,75	9,8	26	143
12	0,75	10,2	26	165
14	0,75	10,8	26	189
16	0,75	11,3	26	210
18	0,75	12	26	241
19	0,75	12	26	246
20	0,75	12,7	26	265
21	0,75	12,7	26	268
24	0,75	14	26	304
25	0,75	14	26	320
2	1	6	19,5	49
3	1	6,3	19,5	62
4	1	7	19,5	77
5	1	7,7	19,5	95
6	1	8,3	19,5	113
7	1	8,3	19,5	119
8	1	9,2	19,5	143
9	1	10,6	19,5	162
10	1	10,6	19,5	169
12	1	11	19,5	196

Information Chart

Cu, Cl5, 250 V, 70 °C, Grey, HFFR, HFFR

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
12	1	11	19,5	196
14	1	11,7	19,5	227
16	1	12,3	19,5	253
18	1	13	19,5	283
19	1	13	19,5	289
20	1	13,7	19,5	314
21	1	13,7	19,5	317
24	1	15,2	19,5	365
25	1	15,2	19,5	384
2	1,5	6,7	13,3	64
3	1,5	7,1	13,3	82
4	1,5	7,8	13,3	103
5	1,5	8,6	13,3	128
6	1,5	9,3	13,3	151
7	1,5	9,3	13,3	161
8	1,5	10,2	13,3	191
9	1,5	11,9	13,3	218
10	1,5	11,9	13,3	228
12	1,5	12,4	13,3	268
14	1,5	13,1	13,3	308
16	1,5	13,8	13,3	343
18	1,5	14,6	13,3	388
19	1,5	14,6	13,3	399
20	1,5	15,4	13,3	429
21	1,5	15,4	13,3	435
24	1,5	17,2	13,3	503
25	1,5	17,2	13,3	529



LAN Data cables

Category cables (CAT) are used in structured cabling for computer networks such as Ethernet over twisted pair. Their unique design and requirements made them widely known. It is possible to carry other signals such as phone and video.

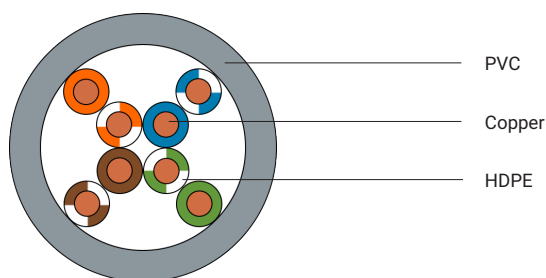
Cables can be produced with different materials according to customer needs such as oil, abrasion resistance, increased UV resistance and halogen-free construction.

CAT 5e U/UTP

Cu, Cl1, 250 V, 60 °C, Grey, HDPE, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Single wire 24 AWG
Insulation	Material Marking	HDPE Color coded
Outer Jacket	Material Color Outer Diameter	PVC, acc. to TM51 Grey See the table
Rating	Nominal Voltage Temperature Range Test Voltage Mutual Capacitance Capacitance Unbalance Frequency Insertion Loss Near-end Crosstalk (NEXT) Loss Return Loss	250 V +60 °C 1200 V 56 nF/km 2% See the table See the table See the table See the table
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	CPR
Reference Standart	Main	ANSI/TIA-568-C.2, IEC-61156-5.

Application

For transmission of analog and digital signals up to 100mbit per second speed in data communication systems. Ethernet and LAN systems.

Information Chart

Cu, Cl1, 250 V, 60 °C, Grey, HDPE, PVC

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
8	0,51	5,2	94	35

Special Electrical Properties

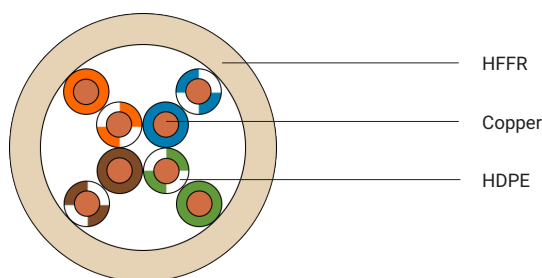
Frequency	Max. Insertion Loss	Min. NEXT Loss	Min. PSNEXT Loss	Min. ELFEXT	Min. PSELFEXT	Min. Return Loss
mhz	dB/100 m	dB	dB	dB/100m	dB/100m	dB
0,772	1,8	67	64	66	66	-
1	2	65,3	62,3	63,8	63,8	23
4	4,1	56,3	53,3	51,8	51,8	23
8	5,8	51,8	48,8	45,7	45,7	23
10	6,5	50,3	47,3	43,8	43,8	23
16	8,2	47,2	44,2	39,7	39,7	23
20	9,3	45,8	42,8	37,8	37,8	23
25	10,4	44,3	41,3	35,8	35,8	22
31,25	11,7	42,9	39,9	33,9	33,9	21
62,5	17	38,4	35,4	27,9	27,9	18
100	22	35,3	32,3	23,8	23,8	16

CAT 5e U/UTP HFFR

Cu, Cl1, 250 V, 60 °C, Grey, HDPE, HFFR



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Single wire 24 AWG
Insulation	Material Marking	HDPE Color coded
Outer Jacket	Material Color Outer Diameter	HFFR Grey See the table
Rating	Nominal Voltage Temperature Range Test Voltage Mutual Capacitance Capacitance Unbalance Frequency Insertion Loss Near-end Crosstalk (NEXT) Loss Return Loss	250 V +60 °C 1200 V 56 nF/km 2% See the table See the table See the table See the table
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	CPR
Reference Standart	Main	ANSI/TIA-568-C.2, IEC-61156-5.

Application

For transmission of analog and digital signals up to 100mbit per second speed in data communication systems. Ethernet and LAN systems.

Information Chart

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
8	0,51	5,2	94	30

Special Electrical Properties

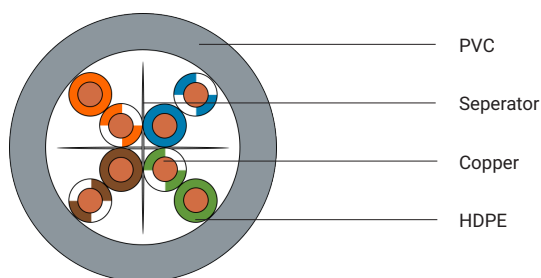
Frequency	Max. Insertion Loss	Min. NEXT Loss	Min. PSNEXT Loss	Min. ELFEXT	Min. PSELFEXT	Min. Return Loss
mhz	dB/100 m	dB	dB	dB/100m	dB/100m	dB
0,772	1,8	67	64	66	66	-
1	2	65,3	62,3	63,8	63,8	23
4	4,1	56,3	53,3	51,8	51,8	23
8	5,8	51,8	48,8	45,7	45,7	23
10	6,5	50,3	47,3	43,8	43,8	23
16	8,2	47,2	44,2	39,7	39,7	23
20	9,3	45,8	42,8	37,8	37,8	23
25	10,4	44,3	41,3	35,8	35,8	22
31,25	11,7	42,9	39,9	33,9	33,9	21
62,5	17	38,4	35,4	27,9	27,9	18
100	22	35,3	32,3	23,8	23,8	16

CAT 6 U/UTP

Cu, Cl1, 250 V, 60 °C, Grey, HDPE, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Single wire 23 AWG
Insulation	Material Marking	HDPE Color coded
Seperator	Shape	Star
Outer Jacket	Material Color Outer Diameter	PVC, acc. to TM51 Grey See the table
Rating	Nominal Voltage Temperature Range Test Voltage Mutual Capacitance Capacitance Unbalance Frequency Insertion Loss Near-end Crosstalk (NEXT) Loss Return Loss	250 V +60 °C 1200 V 56 nF/km 2% See the table See the table See the table See the table
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	CPR
Reference Standart	Main	ANSI/TIA-568-C.2, IEC-61156-5.

Application

For transmission of analog and digital signals up to 1 gbit per second speed in data communication systems. Ethernet and LAN systems.

Information Chart

Cu, Cl1, 250 V, 60 °C, Grey, HDPE, PVC

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
8	0,57	6,4	72	48

Special Electrical Properties

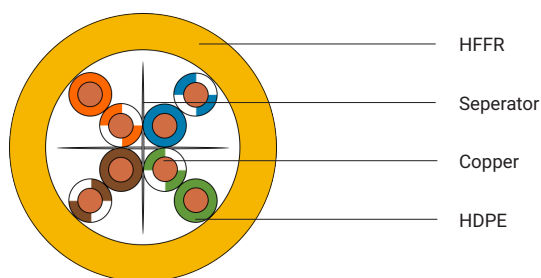
Frequency	Max. Insertion Loss	Min. NEXT Loss	Min. PSNEXT Loss	Min. ELFEXT	Min. PSELFEXT	Min. Return Loss
mhz	dB/100 m	dB	dB	dB/100m	dB/100m	dB
0,772	1,8	76	74	70	67	-
1	2	74,3	72,3	67,8	64,8	20
4	3,8	65,3	63,3	55,8	52,8	23
8	5,3	60,8	58,8	49,7	46,7	24,5
10	6	59,3	57,3	47,8	44,8	25
16	7,6	56,2	54,2	43,7	40,7	25
20	8,5	54,8	52,8	41,8	38,8	24,3
25	9,5	53,3	51,3	39,8	36,8	23,6
31,25	10,7	51,9	49,9	37,9	34,9	21,5
62,5	15,4	47,4	45,4	31,9	28,9	20,1
100	19,8	44,3	42,3	27,8	24,8	18
200	29	39,8	37,8	21,8	18,8	17,3
250	32,8	38,3	36,3	19,8	16,8	16,8

CAT 6 U/UTP HFFR

Cu, Cl1, 250 V, 60 °C, Grey, HDPE, HFFR



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Single wire 23 AWG
Insulation	Material Marking	HDPE Color coded
Seperator	Shape	Star
Outer Jacket	Material Color Outer Diameter	HFFR Grey See the table
Rating	Nominal Voltage Temperature Range Test Voltage Mutual Capacitance Capacitance Unbalance Frequency Insertion Loss Near-end Crosstalk (NEXT) Loss Return Loss	250 V +60 °C 1200 V 56 nF/km 2% See the table See the table See the table See the table
Tests	Flame Retardant Halogen Free Low Smoke Corrosive Gas	IEC 60332-1-2 IEC 60754-1 IEC 61034-2 IEC 60754-2
Approvals	Certificates Available	CPR
Reference Standart	Main	ANSI/TIA-568-C.2, IEC-61156-5.

Application

For transmission of analog and digital signals up to 100mbit per second speed in data communication systems. Ethernet and LAN systems.

Information Chart

Conductor Count	Conductor Section	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	mm	ohm/km	kg
8	0,57	6,4	72	45

Special Electrical Properties

Frequency	Max. Insertion Loss	Min. NEXT Loss	Min. PSNEXT Loss	Min. ELFEXT	Min. PSELFEXT	Min. Return Loss
mhZ	dB/100 m	dB	dB	dB/100m	dB/100m	dB
0,772	1,8	76	74	70	67	-
1	2	74,3	72,3	67,8	64,8	20
4	3,8	65,3	63,3	55,8	52,8	23
8	5,3	60,8	58,8	49,7	46,7	24,5
10	6	59,3	57,3	47,8	44,8	25
16	7,6	56,2	54,2	43,7	40,7	25
20	8,5	54,8	52,8	41,8	38,8	24,3
25	9,5	53,3	51,3	39,8	36,8	23,6
31,25	10,7	51,9	49,9	37,9	34,9	21,5
62,5	15,4	47,4	45,4	31,9	28,9	20,1
100	19,8	44,3	42,3	27,8	24,8	18
200	29	39,8	37,8	21,8	18,8	17,3
250	32,8	38,3	36,3	19,8	16,8	16,8



Coaxial cables

Coaxial cable is used as a transmission line for radio frequency signals. Its applications include feedlines connecting radio transmitters and receivers to their antennas, computer network connections, digital audio (S/PDIF), and distributing cable television signals. Coaxial cable also provides protection of the signal from external electromagnetic interference.

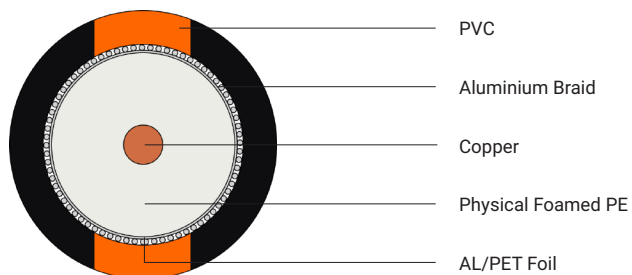
Combined CCTV cables can be produced according to customer needs.

RG6 U4

Cu, Cl1, 1300 V, 70 °C, White, PE, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Single wire 18 AWG
Insulation	Material Marking	Physical PE White
Screen	Material	AL/PET foil
Braid	Material	Aluminium wires
Outer Jacket	Material Color Outer Diameter	PVC, acc. to TM51 White See the table
Rating	Nominal Voltage Temperature Range Test Voltage Mutual Capacitance Propagation Velocity Characteristic Impedance	1300 V +70 °C 2500 V 53 nF/km 84% 75 ohm
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	CPR
Reference Standart	Main Alternative	EN 50117 IEC 61196

Application

Distribution cable for indoor CATV-CCTV systems as connection cable for satellite systems where low attenuation is required.

Information Chart

Cu, Cl1, 1300 V, 70 °C, White, PE, PVC

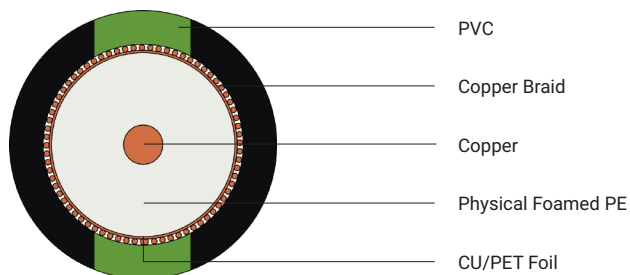
Conductor Count	Conductor Diameter	Outer Diameter	Inner Conductor Resistance	Outer Conductor Resistance	Total Weight
No.	mm	mm	ohm/km	ohm/km	kg
1	1	6,7	22,1	17,6	51

RG6 U6

Cu, Cl1, 1300 V, 70 °C, White, PE, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Single wire 18 AWG
Insulation	Material Marking	Physical PE White
Screen	Material	CU/PET foil
Braid	Material Minimum Cover	Copper wire braiding 85%
Outer Jacket	Material Color Outer Diameter	PVC, acc. to TM51 White See the table
Rating	Nominal Voltage Temperature Range Test Voltage Mutual Capacitance Propagation Velocity Characteristic Impedance	1300 V +70 °C 3000 V 53 nF/km 84% 75 ohm
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	CPR
Reference Standart	Main Alternative	EN 50117 IEC 61196

Application

Distribution cable for indoor CATV-CCTV systems as connection cable for satellite systems where low attenuation is required.

Information Chart

Cu, Cl1, 1300 V, 70 °C, White, PE, PVC

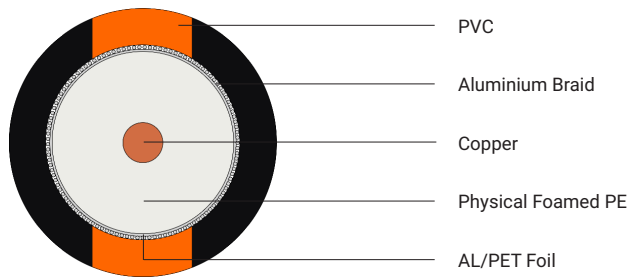
Conductor Count	Conductor Diameter	Outer Diameter	Inner Conductor Resistance	Outer Conductor Resistance	Total Weight
No.	mm	mm	ohm/km	ohm/km	kg
1	1	6,9	22,1	37,4	52

RG11 U4

Cu, Cl1, 2000 V, 70 °C, White, PE, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Single wire 14 AWG
Insulation	Material Marking	Physical PE White
Screen	Material	AL/PET foil
Braid	Material Minimum Cover	Aluminium wires 85%
Outer Jacket	Material Color Outer Diameter	PVC, acc. to TM51 White See the table
Rating	Nominal Voltage Temperature Range Test Voltage Mutual Capacitance Propagation Velocity Characteristic Impedance	2000 V +70 °C 5000 V 53 nF/km 84% 53 ohm
Tests	Flame Retardant	IEC 60332-1-2
Reference Standart	Main Alternative	EN 50117 IEC 61196

Application

Distribution cable for indoor CATV-CCTV systems as connection cable for satellite systems where low attenuation is required.

Information Chart

Cu, Cl1, 2000 V, 70 °C, White, PE, PVC

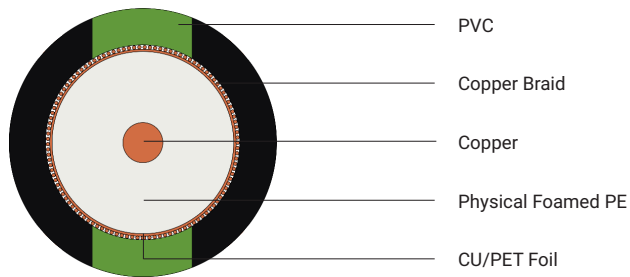
Conductor Count	Conductor Diameter	Outer Diameter	Inner Conductor Resistance	Outer Conductor Resistance	Total Weight
No.	mm	mm	ohm/km	ohm/km	kg
1	1,6	10,6	8,7	27,1	100

RG11 U6

Cu, Cl1, 2000 V, 70 °C, White, PE, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Single wire 14 AWG
Insulation	Material Marking	Physical PE White
Screen	Material	CU/PET foil
Braid	Material Minimum Cover	Copper wires 85%
Outer Jacket	Material Color Outer Diameter	PVC, acc. to TM51 White See the table
Rating	Nominal Voltage Temperature Range Test Voltage Mutual Capacitance Propagation Velocity Characteristic Impedance	2000 V +70 °C 5000 V 53 nF/km 84% 53 ohm
Tests	Flame Retardant	IEC 60332-1-2
Reference Standart	Main Alternative	EN 50117 IEC 61196

Application

Distribution cable for indoor CATV-CCTV systems as connection cable for satellite systems where low attenuation is required.

Information Chart

Cu, Cl1, 2000 V, 70 °C, White, PE, PVC

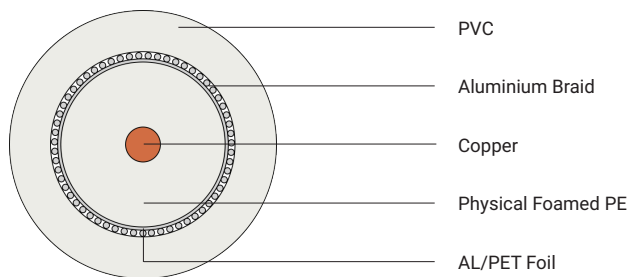
Conductor Count	Conductor Diameter	Outer Diameter	Inner Conductor Resistance	Outer Conductor Resistance	Total Weight
No.	mm	mm	ohm/km	ohm/km	kg
1	1,6	10,2	8,7	10,8	109

RG59 U4

Cu, Cl1, 1300 V, 70 °C, White, PE, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Single wire 20 AWG
Insulation	Material Marking	Physical PE White
Screen	Material	AL/PET foil
Braid	Material Minimum Cover	Aluminium wires 85%
Outer Jacket	Material Color Outer Diameter	PVC, acc. to TM51 White See the table
Rating	Nominal Voltage Temperature Range Test Voltage Mutual Capacitance Propagation Velocity Characteristic Impedance	1100 V +70 °C 2500 V 53 nF/km 84% 75 ohm
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	CPR
Reference Standart	Main Alternative	EN 50117 IEC 61196

Application

Distribution cable for indoor CATV-CCTV systems as connection cable for satellite systems where low attenuation is required.

Information Chart

Cu, Cl1, 1300 V, 70 °C, White, PE, PVC

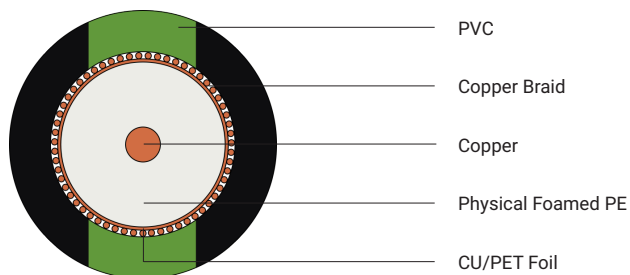
Conductor Count	Conductor Diameter	Outer Diameter	Inner Conductor Resistance	Outer Conductor Resistance	Total Weight
No.	mm	mm	ohm/km	ohm/km	kg
1	0,8	6	36	49,7	38

RG59 U6

Cu, Cl1, 1300 V, 70 °C, White, PE, PVC



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Single wire 20 AWG
Insulation	Material Marking	Physical PE White
Screen	Material	CU/PET foil
Braid	Material Minimum Cover	Copper wire braiding 85%
Outer Jacket	Material Color Outer Diameter	PVC, acc. to TM51 White See the table
Rating	Nominal Voltage Temperature Range Test Voltage Mutual Capacitance Propagation Velocity Characteristic Impedance	1100 V +70 °C 2500 V 53 nF/km 84% 75 ohm
Tests	Flame Retardant	IEC 60332-1-2
Approvals	Certificates Available	CPR
Reference Standart	Main Alternative	EN 50117 IEC 61196

Application

Distribution cable for indoor CATV-CCTV systems as connection cable for satellite systems where low attenuation is required.

Information Chart

Cu, Cl1, 1300 V, 70 °C, White, PE, PVC

Conductor Count	Conductor Diameter	Outer Diameter	Inner Conductor Resistance	Outer Conductor Resistance	Total Weight
No.	mm	mm	ohm/km	ohm/km	kg
1	0,8	6,1	36	19,9	42



Automotive cables

Borsan provides cables for automotive industry applications including internal wiring and external connections. Productions according to international standards or special brand standards are available.

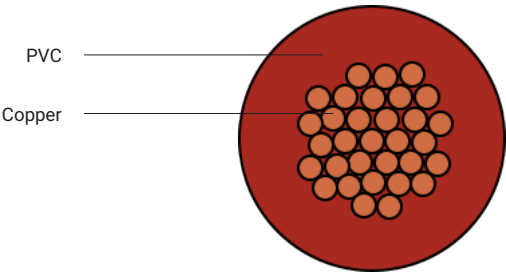
Different constructions for unique applications, battery cables, ADR trailer connections with spiral cords are easily developed and produced in our facilities.



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FLRY

Cu, 105 °C, Any Color, PVC



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper See the table See the table
Insulation	Material Marking Outer Diameter	PVC, 105°C acc. to Class B Optional See the table
Rating	Temperature Range	+105 °C
Reference Standart	Main	ISO 6722-1

Application

Used in internal wiring of vehicle electrical systems.

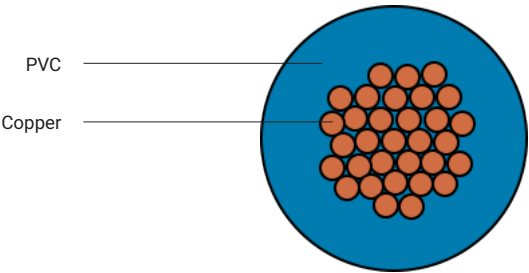
Conductor Count	Conductor Section	Wire Count	Wire Diameter	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	No.	mm	mm	mohm/m	kg/km
1	0,35	12	0,21	1,4	54,4	5
1	0,5	16	0,21	1,6	37,1	7
1	0,75	24	0,21	1,9	24,7	9
1	1	32	0,21	2,1	18,5	11
1	1,25	16	0,33	2,3	14,9	14
1	1,5	30	0,26	2,4	12,7	16
1	2	28	0,31	2,8	9,42	23
1	2,5	50	0,26	3	7,6	26
1	3	45	0,31	3,4	6,15	34
1	4	56	0,31	3,70	4,71	42
1	5	65	0,33	4,2	3,94	52
1	6	84	0,31	4,3	3,14	61
1	8	50	0,46	5,0	2,38	87
1	10	80	0,41	5,8	1,82	108
1	12	96	0,41	6,5	1,52	122
1	16	126	0,41	7,0	1,16	170
1	20	152	0,41	7,8	0,955	194
1	25	196	0,41	8,7	0,743	265



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FLRYW

Cu, 125 °C, Any Color, PVC



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper See the table See the table
Insulation	Material Marking Outer Diameter	PVC, 125°C acc. to Class C Optional See the table
Rating	Temperature Range	+125 °C
Reference Standart	Main	ISO 6722-1

Application

Used in internal wiring of vehicle electrical systems.

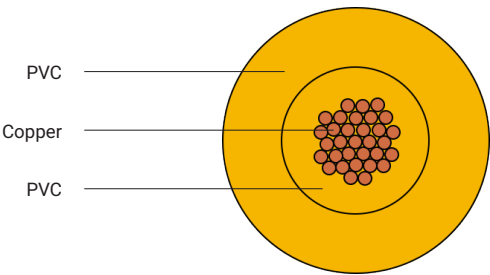
Conductor Count	Conductor Section	Wire Count	Wire Diameter	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	No.	mm	mm	mohm/m	kg/km
Type-A						
1	0,35	7	0,26	1,3	54,4	5
1	0,5	19	0,19	1,6	37,1	7
1	0,75	19	0,23	1,9	24,7	9
1	1	19	0,26	2,1	18,5	11
1	1,25	19	0,3	2,3	14,9	12
1	1,5	19	0,32	2,4	12,7	16
1	2	19	0,38	2,8	9,42	22
Type-B						
1	0,35	12	0,21	1,4	54,4	5
1	0,5	16	0,21	1,6	37,1	7
1	0,75	24	0,21	1,9	24,7	9
1	1	32	0,21	2,1	18,5	11
1	1,25	16	0,33	2,3	14,9	14
1	1,5	30	0,26	2,4	12,7	16
1	2	28	0,31	2,8	9,42	23
1	2,5	50	0,26	3	7,6	26
1	3	45	0,31	3,4	6,15	34
1	4	56	0,31	3,70	4,71	42
1	5	65	0,33	4,2	3,94	52
1	6	84	0,31	4,3	3,14	61
1	8	50	0,46	5,0	2,38	87
1	10	80	0,41	5,8	1,82	108
1	12	96	0,41	6,5	1,52	122
1	16	126	0,41	7,0	1,16	170
1	20	152	0,41	7,8	0,955	194
1	25	196	0,41	8,7	0,743	265



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FLYY

Cu, 105 °C, Any Color, PVC, PVC



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper See the table See the table
Insulation	Material Marking Outer Diameter	PVC, 125°C acc. to Class C Optional See the table
Rating	Temperature Range	+125 °C
Reference Standart	Main	ISO 6722-1

Application

Used in internal wiring of vehicle electrical systems.

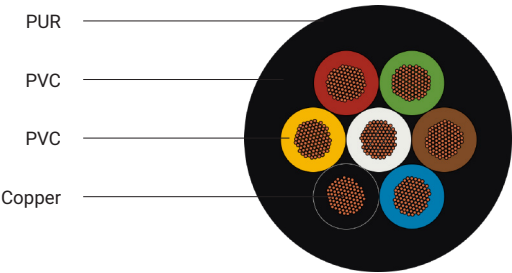
Conductor Count	Conductor Section	Wire Count	Wire Diameter	Outer Diameter	Conductor Resistance	Total Weight
No.	mm ²	No.	mm	mm	mohm/m	kg/km
1	0,5	16	0,21	3,1	37,1	14
1	0,75	24	0,21	3,3	24,7	17
1	1	32	0,21	3,6	18,5	20
1	1,5	30	0,26	4,1	12,7	28
1	2	40	0,26	4,3	9,42	33
1	2,5	50	0,26	4,8	7,61	41



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FLRY11Y

Cu, Cl 5, 85 °C, Black, PVC, PVC, PUR



Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Copper Class 5 Class 5
Insulation	Material Marking	PVC, acc. to ISO 6722 Optional
Inner Sheath	Material	PVC, acc. to ISO 4141
Sheath	Material Outer Diameter Color	PUR, acc. to ISO 4141 See the table Black
Rating	Temperature Range Operating Voltage	+85 °C 60 V
Reference Standart	Main	ISO 4141, ISO 6722

Application

Used in connection cable between truck, tractor and trailer or semi-trailer, lighting and wiring systems. For Class A usage.

FLRY11Y

Cu, Cl 5, 85 °C, Black, PVC, PVC, PUR

Information Chart

Conductor Count	Conductor Section	Outer Diameter	Total Weight
No.	mm ²	mm	kg/km
2	1	6	55
2	1,5	6,6	68
3	1	6,3	67
4	1	6,8	81
4	1,5	7,5	106
5	1	7,5	97
5 + 1	1 + 2,5	9	133
6 + 1	1 + 2,5	10,3	187
7	0,75	7,3	101
7	1	8,9	166
8 + 1	1,5 + 2,5	11,7	239
10 + 3 + 2	1,5 + 2,5 + 1,5	14,4	391
10 + 3	1,5 + 2,5	14,4	367
2 + 2	0,75 + 1,5	7,2	85
2 + 3	6 + 1,5	12,1	267
2 + 3 + 2	6 + 1,5 + 1,5	12,1	321
2 + 3 + 2	4 + 1,5 + 1,5	11,9	257
18	1,5	13,7	407
25	1,5	16,1	560



Copper conductors

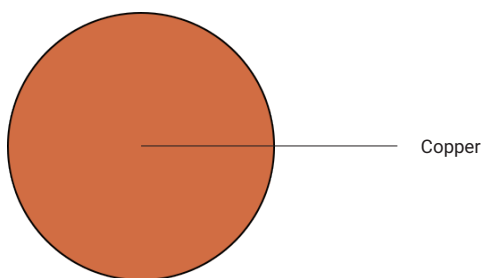
Copper is the most used conductor material for electric cables and wires. Borsan production facilities are located in a region where top quality copper cathods are produced. Logistic benefits allowed us to provide best conductors for copper cables. The copper wires can be thinned to very small diameters thanks to their chemical features.

Copper Single Wire

Cu



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Construction and Technical Info

Conductor	Product Diameter Material	0,12 - 3,5 mm Copper
Packing	Acc. to customer specification and diameter on DIN 630 iron/wooden spools and DIN 250 plastic spools	
Approvals	Certificates Available	TSE

Application

Single wires (annealed/hard drawn) are produced according to orders in rod break down machine and they are consumed for in-house requirements as raw material or served to direct sale.

Chemical Specifications

In percentages acc. to EN 13602

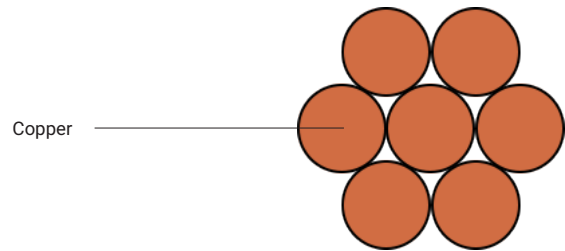
Sn	Zn	Pb	Fe	Ni	Al	P	Si	Mn	S	Co	Au	Ti	O	Cd	Bi	Cr	Sb	Mg	As	Se	Te	Ag	Be	Zr	B	Cu	H
2	1	5	10	10	2	3	2	0,5	15	1	-	-	5	1	1	1	4	1	5	2	2	25	-	-	-	min, 99,99	1,5
0,1	1	0,3	1,1	0,1	0,1	0,3	0,9	0,5	8,5	0,9	0,1	0,1	1,5	0,1	0,6	0,5	0,4	0,4	0,6	0,4	1,1	4,8	0,1	0,3	0,1	99,9973	0,66



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Copper Bunched Wire

Cu



Construction and Technical Info

Conductor	Cross Section Range Material	0,5 - 300 mm ² Copper
Packing	Iron DIN 630 spools and different size wooden drums	
Approvals	Certificates Available	TSE

Application

The inlet single and multiple wire are bunched in single twist and rigid stranders according to customer specifications (different lay lengths and geometric construction).

Chemical Specifications

In percentages acc. to EN 13602

Sn	Zn	Pb	Fe	Ni	Al	P	Si	Mn	S	Co	Au	Ti	O	Cd	Bi	Cr	Sb	Mg	As	Se	Te	Ag	Be	Zr	B	Cu	H
2	1	5	10	10	2	3	2	0,5	15	1	-	-	5	1	1	1	4	1	5	2	2	25	-	-	-	min, 99,99	1,5
0,1	1	0,3	1,1	0,1	0,1	0,3	0,9	0,5	8,5	0,9	0,1	0,1	1,5	0,1	0,6	0,5	0,4	0,4	0,6	0,4	1,1	4,8	0,1	0,3	0,1	99,9973	0,66



Aluminium conductors

Aluminium conductors can be used in further processing or overhead line power transmission with or without insulation. Borsan uses its own aluminium conductor for cable producing. Besides that, we provide aluminium conductors for well-known cable producers all around the world. 2 reverber furnaces are working 7/24 to provide highest quality conductors. Compressed construction that we use provides many benefits such as better price and smaller outside diameter with same features. Regular construction is also available on request.

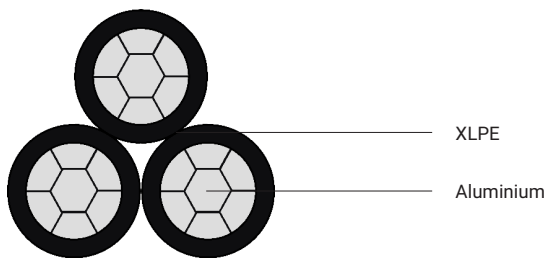
Different country standards and approvals are available on request.

ABC

Al, Cl2, 0,6-1 kV, 90 °C, Black, XLPE



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Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Aluminium RM: Class 2 RM: Class 2
Insulation	Material Marking	XLPE acc. to TIX-3 or TIX-5 HD 626 S1
Component	Material	Hanger Wire
Rating	Nominal Voltage Test Voltage During Installation Operating Temperature Short Circuit Temperature Bending Radius	0,6-1 kV 2500 V -5 °C -30 °C up to +80 °C 250 °C 12 x Diameter
Tests	Flame Retardant	IEC 60332-1
Approvals	Certificates Available	CPR, DOP
Reference Standart	Main	HD 626 S1

Application

Self-supporting overhead cable bundle, applied for electric power distribution in low voltage metropolitan, suburban and rural networks, for public lighting and house connections. Laid on pillars, consoles and house fronts.

Information Chart

Al, Cl2, 0,6-1 kV, 90 °C, Black, XLPE

Number and Remembrance	Insulated Conductors					Wire Hanger				Cable		
	Number and Cross Section	No of Wires	Nominal Diameter of Conductors	Conductor Resistance	Current Carrying Capacity	Number and Cross Section	Current Carrying Capacity	Average Diameter Wire Hangers	Tensile Strength	Conductor Resistance	Twisted Diameter	Net Weight
	mm²	No.	mm	ohm/km	A	mm²	A	mm	kN	ohm/km	mm	kg/km
Sectional Area of the Conductor												
mm²	mm²	No.	mm	ohm/km	A	mm²	A	mm	kN	ohm/km	mm	kg/km
Reference Standart HD 626												
2 x 16	2x16	7	4,700	1,91	93	-	-	-	-	-	15	130
2 x 25	2x25	7	5,900	1,2	122	-	-	-	-	-	18,5	180
2 x 35	2x35	7	6,900	0,868	129	-	-	-	-	-	2	240
2 x 50	2x50	7	8,100	0,641	158	-	-	-	-	-	24	320
2 x 70	2x70	14	9,700	0,443	203	-	-	-	-	-	26	450
3 x 16	3x16	7	4,700	1,91	83	-	-	-	-	-	16	190
3 x 25	3x25	7	5,900	1,2	111	-	-	-	-	-	20	280
3 x 35	3x35	7	6,900	0,868	131	-	-	-	-	-	22	360
3 x 50	3x50	7	8,100	0,641	168	-	-	-	-	-	24	490
3 x 70	3x70	14	9,700	0,443	213	-	-	-	-	-	28	670
3 x 95	3x95	19	11,400	0,32	258	-	-	-	-	-	32	940
3 x 120	3x120	19	12,928	0,253	300	-	-	-	-	-	36	1150
3 x 150	3x150	14	14,241	0,206	344	-	-	-	-	-	38	1390
4 x 16	4x16	7	4,700	1,91	83	-	-	-	-	-	18	260
4 x 25	4x25	7	5,900	1,2	111	-	-	-	-	-	22	370
4 x 35	4x35	7	6,900	0,868	131	-	-	-	-	-	26	480
4 x 50	4x50	7	8,100	0,641	168	-	-	-	-	-	28	650
4 x 70	4x70	14	9,700	0,443	213	-	-	-	-	-	32	900
4 x 95	4x95	19	11,400	0,32	258	-	-	-	-	-	36	1250
4 x 120	4x120	19	12,928	0,253	300	-	-	-	-	-	40	1530
4 x 150	4x150	30	14,241	0,206	344	-	-	-	-	-	44	1850
3 x 16 + 10	3x16	7	4,700	1,91	103	-	-	6,6	-	-	26	240
3 x 25 + 16	3x25	7	5,900	1,2	132	-	-	7,8	-	-	28	350
3 x 35 + 16	3x35	7	6,900	0,868	139	-	-	7,8	-	-	31	430
3 x 35 + 25	3x35	7	6,900	0,868	139	-	-	8,6	7,4	1,38	31	460
3 x 50 + 25	3x50	7	8,100	0,641	168	-	-	8,6	7,4	1,38	34	580
3 x 70 + 25	3x70	14	9,700	0,443	213	-	-	8,6	7,4	1,38	38	770
3 x 70 + 35	3x70	14	9,700	0,443	213	-	-	9,6	10,3	0,986	38	800
3 x 95 + 50	3x95	19	11,400	0,32	258	-	-	11,3	14,2	0,72	42	1110
3 x 120 + 70	3x120	19	12,928	0,253	300	-	-	12,9	20,6	0,493	46	1380
3 x 150 + 70	3x150	30	14,241	0,206	344	-	-	12,9	20,6	0,493	48	1630
3 x 25 + 16 + 16	3x25	7	5,900	1,2	132	1x16	60	7,8	-	-	28	410
3 x 35 + 16 + 16	3x35	7	6,900	0,868	139	1x16	60	7,8	-	-	31	490
3 x 35 + 25 + 16	3x35	7	6,900	0,868	139	1x16	60	8,6	7,4	1,38	32	520
3 x 50 + 25 + 16	3x50	7	8,100	0,641	168	1x16	60	8,6	7,4	1,38	34	650
3 x 50 + 35 + 16	3x50	7	8,100	0,641	168	1x16	60	9,6	10,3	0,986	35	680
3 x 70 + 25 + 16	3x70	14	9,700	0,443	213	1x16	60	8,6	7,4	1,38	36	830
3 x 70 + 35 + 16	3x70	14	9,700	0,443	213	1x16	60	9,6	10,3	0,986	37	860
3 x 70 + 50 + 16	3x70	14	9,700	0,443	213	1x16	60	11,3	14,2	0,72	40	910
3 x 95 + 35 + 16	3x95	19	11,400	0,32	258	1x16	60	9,6	10,3	0,986	42	1130
3 x 95 + 50 + 16	3x95	19	11,400	0,32	258	1x16	60	11,3	14,2	0,72	44	1170
3 x 95 + 70 + 16	3x95	19	11,400	0,32	258	1x16	60	12,9	20,6	0,493	46	1240
3 x 120 + 70 + 16	3x120	19	12,928	0,253	300	1x16	60	12,9	20,6	0,493	47	1440
3 x 150 + 70 + 16	3x150	30	14,241	0,206	344	1x16	60	12,9	20,6	0,493	49	1690

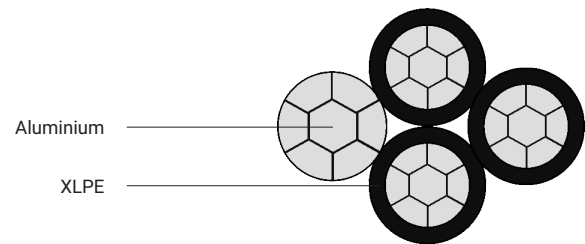
Insulated Conductors						Wire Hanger				Cable		
Number and Remembrance	Number and Cross Section	No of Wires	Nominal Diameter of Conductors	Conductor Resistance	Current Carrying Capacity	Number and Cross Section	Current Carrying Capacity	Average Diameter Wire Hangers	Tensile Strength	Conductor Resistance	Twisted Diameter	Net Weight
Sectional Area of the Conductor mm²	mm²	No.	mm	ohm/km	A	mm²	A	mm	kN	ohm/km	mm	kg/km
Reference Standart NFC-33-209												
2 x 16	2x16	7	4,700	1,91	93	-	-	-	-	-	15	120
2 x 25	2x25	7	5,900	1,2	122	-	-	-	-	-	18,5	190
2 x 35	2x35	7	6,900	0,868	129	-	-	-	-	-	2	250
2 x 50	2x50	7	8,100	0,641	158	-	-	-	-	-	24	330
4 x 16	4x16	7	4,700	1,91	83	-	-	-	-	-	18	250
4 x 25	4x25	7	5,900	1,2	111	-	-	-	-	-	22	380
4 x 35	4x35	7	6,900	0,868	131	-	-	-	-	-	26	510
4 x 50	4x50	7	8,100	0,641	168	-	-	-	-	-	28	660
4 x 70	4x70	12	9,700	0,443	213	-	-	-	-	-	32	940
4 x 95	4x95	19	11,400	0,32	258	-	-	-	-	-	36	1270
4 x 120	4x120	19	12,800	0,253	300	-	-	-	-	-	40	1550
3 x 25 + 54,6	3x25	7	5,900	1,2	111	-	-	12,8	16,6	0,63	30	490
3 x 35 + 54,6	3x35	7	6,900	0,868	131	-	-	12,8	16,6	0,63	33	590
3 x 50 + 54,6	3x50	7	8,100	0,641	168	-	-	12,8	16,6	0,63	36	700
3 x 70 + 54,6	3x70	12	9,700	0,443	213	-	-	12,8	16,6	0,63	38	910
3 x 70 + 70	3x70	12	9,700	0,443	213	-	-	13,3	20,6	0,493	41	970
3 x 95 + 54,6	3x95	19	11,400	0,32	258	-	-	12,8	16,6	0,63	44	1160
3 x 95 + 70	3x95	19	11,400	0,32	258	-	-	13,3	20,6	0,493	44	1210
3 x 120 + 70	3x120	19	12,928	0,253	300	-	-	13,3	20,6	0,493	46	1420
3 x 150 + 95	3x150	30	14,241	0,206	344	-	-	16	27,9	0,363	48	1730
3 x 25 + 54,6 + 16	3x25	7	5,900	1,2	111	1x16	60	12,8	16,6	0,63	30	550
3 x 35 + 54,6 + 16	3x35	7	6,900	0,868	131	1x16	60	12,8	16,6	0,63	33	650
3 x 50 + 54,6 + 16	3x50	7	8,100	0,641	168	1x16	60	12,8	16,6	0,63	36	760
3 x 50 + 54,6 + 25	3x50	7	8,100	0,641	168	1x25	-	12,8	16,6	0,63	37	800
3 x 70 + 54,6 + 16	3x70	12	9,700	0,443	213	1x16	60	12,8	16,6	0,63	38	970
3 x 70 + 54,6 + 25	3x70	12	9,700	0,443	213	1x25	-	12,8	16,6	0,63	39	1010
3 x 70 + 70 + 16	3x70	12	9,700	0,443	213	1x16	60	13,3	20,6	0,493	41	1030
3 x 70 + 70 + 25	3x70	12	9,700	0,443	213	1x25	-	13,3	20,6	0,493	42	1060
3 x 95 + 54,6 + 16	3x95	19	11,400	0,32	258	1x16	60	12,8	16,6	0,63	44	1220
3 x 95 + 54,6 + 25	3x95	19	11,400	0,32	258	1x25	-	12,8	16,6	0,63	45	1250
3 x 95 + 70 + 16	3x95	19	11,400	0,32	258	1x16	60	13,3	20,6	0,493	44	1280
3 x 95 + 70 + 25	3x95	19	11,400	0,32	258	1x25	-	13,3	20,6	0,493	45	1310
3 x 120 + 70 + 16	3x120	19	12,928	0,253	300	1x16	60	13,3	20,6	0,493	46	1480
3 x 120 + 70 + 25	3x120	19	12,928	0,253	300	1x25	-	13,3	20,6	0,493	47	1520
3 x 120 + 95 + 25	3x120	19	12,928	0,253	300	1x25	-	16	27,9	0,363	48	1600
3 x 150 + 95 + 16	3x150	30	14,241	0,206	344	1x16	60	16	27,9	0,363	49	1800
3 x 150 + 95 + 25	3x150	30	14,241	0,206	344	1x25	-	16	27,9	0,363	50	1830
3 x 25 + 54,6 + 2x 16	3x25	7	5,900	1,2	111	2x16	-	12,8	16,6	0,63	30	610
3 x 35 + 54,6 + 2x 16	3x35	7	6,900	0,868	131	2x16	-	12,8	16,6	0,63	33	710
3 x 50 + 54,6 + 2x 16	3x50	7	8,100	0,641	168	2x16	-	12,8	16,6	0,63	36	830
3 x 50 + 54,6 + 2x 25	3x50	7	8,100	0,641	168	2x25	-	12,8	16,6	0,63	37	890
3 x 70 + 54,6 + 2x 16	3x70	12	9,700	0,443	213	2x16	-	12,8	16,6	0,63	38	1040
3 x 70 + 54,6 + 2x 25	3x70	12	9,700	0,443	213	2x25	-	12,8	16,6	0,63	40	1100
3 x 70 + 70 + 2x16	3x70	12	9,700	0,443	213	2x16	-	13,3	20,6	0,493	41	1090
3 x 70 + 70 + 2x 25	3x70	12	9,700	0,443	213	2x25	-	13,3	20,6	0,493	43	1160
3 x 95 + 54,6 + 2x 16	3x95	19	11,400	0,32	258	2x16	-	12,8	16,6	0,63	40	1280
3 x 95 + 54,6 + 2x 25	3x95	19	11,400	0,32	258	2x25	-	12,8	16,6	0,63	42	1350
3 x 95 + 70 + 2x 16	3x95	19	11,400	0,32	258	2x16	-	13,3	20,6	0,493	44	1340
3 x 95 + 70 + 2x 25	3x95	19	11,400	0,32	258	2x25	-	13,3	20,6	0,493	46	1400
3 x 120 + 70 + 2x 16	3x120	19	12,928	0,253	300	2x16	-	13,3	20,6	0,493	46	1550
3 x 120 + 70 + 2x 25	3x120	19	12,928	0,253	300	2x25	-	13,3	20,6	0,493	48	1610
3 x 150 + 95 + 2x 16	3x150	30	14,241	0,206	344	2x16	-	16	27,9	0,363	48	1860
3 x 150 + 95 + 2x 25	3x150	30	14,241	0,206	344	2x25	-	16	27,9	0,363	50	1930



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AER

Al, 0,6-1 kV, 90 °C, Black, PE



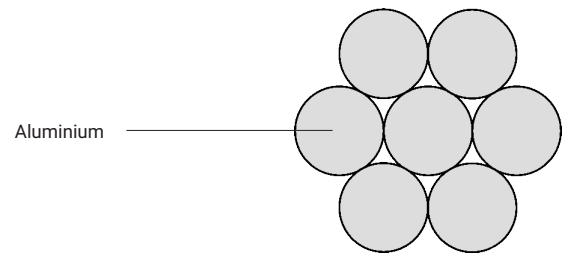
Construction and Technical Info

Conductor	Cross Section Material Wire Count Wire Diameter	See the table Aluminium RM: Class 2 RM: Class 2
Insulation	Material	PE
Component	Material	Hanger Wire
Rating	Nominal Voltage Test Voltage During Installation Min. Permissible Operating Temperature Short Circuit Temperature Bending Radius	0,6-1 kV 2500 V 5 °C 90 °C 250 °C 12 x Diameter
Tests	Flame Retardant	IEC 60332-1
Approvals	Certificates Available	TSE
Reference Standart	Main	TS 11654

Application

It is used at electrical systems of villages at rural areas and woodlands. It is safer than bare transmission lines against short circuit and accidental touch.

Number and Remembrance	Insulated Conductors					Wire Hanger				Cable		
	Number and Cross Section	No of Wires	Nominal Diameter of Conductors	Conductor Resistance	Current Carrying Capacity	Number and Cross Section	Current Carrying Capacity	Average Diameter Wire Hangers	Tensile Strength	Conductor Resistance	Twisted Diameter	Net Weight
	mm ²	No.	mm	ohm/km	A	mm ²	A	mm	kN	ohm/km	mm	kg/km
Sectional Area of the Conductor												
1 x 16 + 25	1 x 16	1	4,4	1,91	75	-	-	5,9	7,4	1,38	15	140
1 x 25 + 35	1 x 25	7	5,9	1,2	10	-	-	6,9	10,3	0,986	17	200
1 x 35 + 50	1 x 35	7	6,9	0,868	125	-	-	8,1	14,2	0,72	20	275
3 x 16 + 25	3 x 16	1	4,4	1,91	70	-	-	5,9	7,4	1,38	22	275
3 x 25 + 35	3 x 25	7	5,9	1,2	90	-	-	6,9	10,3	0,986	26	400
3 x 35 + 50	3 x 35	7	6,9	0,868	115	-	-	8,1	14,2	0,72	30	575
3 x 50 + 70	3 x 50	7	8,1	0,641	140	-	-	9,6	20,6	0,493	35	750
3 x 70 + 95	3 x 70	7	9,6	0,443	180	-	-	11,4	27,9	0,363	41	1050
3 x 120 + 95	3 x 120	19	12,8	0,253	250	-	-	11,4	27,9	0,363	47	1550
4 x 16 + 25	4 x 16	1	4,4	1,91	70	-	-	5,9	7,4	1,38	24	375
4 x 25 + 35	4 x 25	7	5,9	1,2	90	-	-	6,9	10,3	0,986	28	550
4 x 35 + 50	4 x 35	7	6,9	0,868	115	-	-	8,1	14,2	0,72	32	750
4 x 50 + 70	4 x 50	7	8,1	0,641	140	-	-	9,6	20,6	0,493	38	1000
4 x 70 + 95	4 x 70	7	9,6	0,443	180	-	-	11,4	27,9	0,363	45	1350
1 x 16 + 1 x 16 + 25	1 x 16	1	4,4	1,91	70	1 x 16	60	5,9	7,4	1,38	15	225
3 x 16 + 1 x 16 + 25	3 x 16	1	4,4	1,91	60	1 x 16	60	5,9	7,1	1,38	22	350
3 x 25 + 1 x 16 + 35	3 x 25	7	5,9	1,2	80	1 x 16	60	6,9	10,3	0,986	26	475
3 x 35 + 1 x 16 + 50	3 x 35	7	6,9	0,868	95	1 x 16	60	8 x 1	14,2	0,72	30	625
3 x 50 + 1 x 16 + 70	3 x 50	7	8,1	0,641	120	1 x 16	60	9,6	20,6	0,493	35	800
3 x 70 + 1 x 16 + 95	3 x 70	7	9,6	0,443	150	1 x 16	60	11,4	27,9	0,363	41	1100
4 x 16 + 1 x 16 + 25	4 x 16	1	4,4	1,91	60	1 x 16	60	5,9	7,4	1,38	25	450
4 x 25 + 1 x 16 + 35	4 x 25	7	5,9	1,2	80	1 x 16	60	6,9	10,3	0,986	30	610
4 x 35 + 1 x 16 + 50	4 x 35	7	6,9	0,868	95	1 x 16	60	8,1	14,2	0,72	34	810
4 x 50 + 1 x 16 + 70	4 x 50	7	8,1	0,641	120	1 x 16	60	9,63	20,6	0,493	40	1060
4 x 70 + 1 x 16 + 95	4 x 70	7	9,6	0,443	150	1 x 16	60	11,4	27,9	0,363	47	1420



Construction and Technical Info

Conductor	Cross Section Material	See the table Aluminium
Technical Information	Pure Aluminium Conductors, which are used in low voltage distribution lines are produced in accordance with TS EN 50182 standards. Conductors are stranded with seven or more wires as concentrically. If conductors consist of more than one layer, then they are stranded in reverse direction to each other. Upon request, conductors can be produced in accordance with DIN, BS, ASTM, CSA, NF and EN standards. Conductors are generally delivered on wooden drums.	
Approvals	Certificates Available	TSE
Reference Standard	Main Alternative Alternative Alternative Alternative Alternative	TS 11654 ASTM IEC 61089/1991 EN 50182 - DIN 48201 part 5 CSA C 49 BS EN 50182/2001-BS215 part 1/1970

Application

AAC conductor is also known as aluminium stranded conductor. It is manufactured from electrolytically refined aluminium, with a minimum purity of 99.7%. AAC is used mainly in urban areas where the spacing is short and the supports are close. All aluminium conductors are made up of one or more strands of aluminium wire depending on the end usage. AAC is also used extensively in coastal regions because it has a high degree of corrosion resistance.

Code	Number and Wire Diameter	Overall Diameter	Cross Section	Net Weight	Rated Stenght	DC Resistance	Cuurent Carrying Capacity
	mm	mm	mm ²	kg / km	kN	Ohm / km	A
Standards of USA - ASTM							
Rose	7/1,96	5,88	21,1	58,2	3,91	1,362	138
Iris	7/2,47	7,41	33,6	92,6	5,99	0,8574	185
Pansy	7/2,78	8,34	42,4	116,6	7,3	0,6801	214
Poppy	7/3,12	9,36	53,5	147,2	8,84	0,539	247
Aster	7/3,50	10,5	67,4	185,7	11,1	0,4276	286
Phlox	7/3,93	11,79	85	233,9	13,5	0,339	331
Oxlip	7/4,42	13,26	107,2	295,2	17	0,2688	383
Valerian	19/2,91	14,55	126,7	348,6	20,7	0,2275	425
Sneezewort	7/4,80	14,4	126,7	348,8	20,1	0,2275	425
Laurel	19/3,10	15,05	135,2	372,2	22,1	0,2133	443
Daisy	7/4,96	14,88	135,2	372,3	21,4	0,2133	443
Peony	19/3,19	15,95	152	418,3	24,3	0,1896	478
Tulip	19/3,38	16,9	170,5	469,5	27,3	0,1695	513
Daffodil	19/3,45	17,25	177,3	487,9	28,4	0,1625	526
Canna	19/3,67	18,35	201,4	554,9	31,6	0,1432	570
Goldentuft	19/3,91	19,55	228	627,6	35	0,1264	616
Syringa	37/2,88	20,16	242	664,8	38,6	0,1193	639
Cosmos	19/4,02	20,1	242	664,8	37	0,1193	639
Hyacinth	37/2,95	20,65	253,3	696,8	40,5	0,1137	658
Zinnia	19/4,12	20,6	253,3	697,1	38,9	0,1137	658
Dahlia	19/4,35	21,75	282	775,8	43,3	0,1023	703
Mistletoe	37/3,12	21,84	282	775,7	44,3	0,1023	704
Meadowsweet	37/3,23	22,61	304	836,3	47,5	0,0948	738
Orchid	37/3,33	23,31	323,3	886,9	50,4	0,0893	765
Heuchera	37/3,37	23,59	329,4	907,4	51,7	0,0875	775
Flag	61/2,72	24,48	354,7	975,8	57,1	0,0813	812
Varbena	37/3,49	24,43	354,7	975,7	55,4	0,0813	812
Nasturtium	61/2,75	24,75	362,6	998,5	58,4	0,0795	823
Violet	37/3,53	24,71	362,6	998,5	56,7	0,0795	823
Cattail	61/2,82	25,38	380	1046	60,3	0,0759	847
Petunia	37/3,62	25,34	380	1046	58,6	0,0759	847
Lilac	61/2,90	26,1	402,8	1110	63,8	0,0715	878
Arbustus	37/3,72	26,04	402,8	1109	61,8	0,0715	878
Snapdragon	61/3,09	27,81	456	1256	70,8	0,0632	948
Cockscomb	37/3,96	27,72	456	1256	68,4	0,0632	948
Goldenrod	61/3,18	28,62	483,4	1331	75	0,0596	982
Magnolia	37/4,08	28,56	483,4	1331	72,6	0,0596	982
Camellia	61/3,25	29,25	506,7	1394	78,3	0,0596	1010
Hawkweed	37/4,18	29,26	506,7	1395	76,2	0,0596	1010
Larkspur	61/3,31	29,79	523,7	1442	81,3	0,055	1031
Bluebell	37/4,25	29,75	523,7	1441	78,8	0,055	1031
Marigold	61/3,43	30,87	564	1553	87,3	0,0511	1079
Hawthorn	61/3,55	31,95	604,2	1662	93,5	0,0447	1124
Narcissus	61/3,67	33,03	644,5	1774	98,1	0,0447	1169
Columbine	61/3,78	34,02	694,8	1884	104	0,0421	1212
Carnation	61/3,89	35,01	725,1	1997	108	0,0398	1253
Gladiolus	61/4,00	36	765,41	2108	114	0,0376	1294
Coreopsis	61/4,10	36,9	805,7	2216	120	0,0358	1333
Jessamine	61/4,30	38,7	886,7	2442	132	0,0325	1408
Cowslip	91/3,77	41,47	1013	2787	153	0,0284	1518
Sagebrush	91/3,99	43,89	1140	3166	167	0,0255	1612
Lupine	91/4,21	46,31	1267	3519	186	0,023	1706
Bitterroot	91/4,42	48,62	1393	3872	205	0,0209	1793
Trillium	127/3,90	50,7	1520	4226	223	0,0191	1874
Bluebonnet	127/4,22	54,86	1773	4977	261	0,0166	2024

Information Chart

Code	Number and Wire Diameter	Overall Diameter	Cross Section	Net Weight	Rated Stength	DC Resistance	Cuurent Carrying Capacity
	mm	mm	mm ²	kg / km	kN	Ohm / km	A
Standards of UK - BS EN 50182/2001, BS215 part 1/1970							
23 - AL1	7/2,06	6,18	22	64	3,99	1,227	114
27 - AL1	7/2,21	6,63	-	73	4,83	1,0643	124
37 - AL1	7/2,59	7,77	-	101	6,27	0,7749	144
43 - AL1	7/2,79	8,37	-	117	7,28	0,6678	159
53 - AL1	7/3,10	9,3	50	145	8,28	0,5419	181
64 - AL1	7/3,40	10,2	60	174	9,9	0,4505	199
74 - AL1	7/3,66	10,98	-	201	11,78	0,388	219
79 - AL1	7/3,78	11,34	-	215	12,57	0,3638	227
84 - AL1	7/3,91	11,73	-	230	13,46	0,34	238
96 - AL1	7/4,17	12,51	-	261	15,3	0,2989	256
106 - AL1	7/4,39	13,17	100	290	16	0,2702	271
106 - AL1	19/2,67	13,35	-	292	18,08	0,2701	274
132 - AL1	7/4,90	14,7	-	361	21,12	0,2165	308
158 - AL1	19/3,25	16,25	150	434	25,7	0,1825	346
186 - AL1	19/3,53	17,65	-	511	29,75	0,1546	380
213 - AL1	19/3,78	18,9	200	587	32,4	0,1349	414
238 - AL1	19/3,99	19,95	-	653	38,01	0,121	439
266 - AL1	19/4,22	21,1	250	731	40,4	0,1083	470
323 - AL1	19/4,65	23,25	300	888	48,75	0,08916	528
373 - AL1	37/3,78	26,46	400	1145	63,1	0,06944	619
415 - AL1	19/5,00	25	-	1025	59,69	0,077	572
372 - AL1	37/3,58	25,06	-	1027	59,59	0,0774	572
486 - AL1	37/4,09	28,63	-	1340	77,78	0,0593	676
530 - AL1	37/4,27	29,89	-	1461	84,77	0,0544	710
628 - AL1	37/4,65	32,55	-	1732	100,54	0,0459	784

Code	Number and Wire Diameter	Overall Diameter	Cross Section	Net Weight	Rated Stenght	DC Resistance	Cuurent Carrying Capacity
	mm	mm	mm ²	kg / km	kN	Ohm / km	A
Standards of Canada - CSA C 49							
Rose	7/1,96	5,89	21,16	58	4,1	1,351	104
Lily	7/2,20	6,61	26,65	73	5	1,072	124
Iris	7/2,47	7,42	33,61	92	6,2	0,8497	136
Pansy	7/2,77	8,33	42,39	116	7,6	0,6739	157
Poppy	7/3,12	9,36	53,48	146	9,2	0,5341	180
Aster	7/3,50	10,51	67,42	184	11,6	0,4236	207
Phlox	7/3,93	11,8	85,03	232	14,1	0,336	237
Oxlip	7/4,41	13,25	107,23	293	17,7	0,2664	273
Daisy	7/4,96	14,9	135,16	369	22,4	0,2113	313
Valerian	19/2,91	14,57	126,71	348	22,3	0,2274	305
Laurel	19/3,01	15,05	135,16	372	23,8	0,2129	317
Peony	19/3,19	15,97	152	417	26,2	0,188	340
Tulip	19/3,38	16,91	170,45	467	29,4	0,1638	364
Daffodil	19/3,44	17,24	177,35	488	30,6	0,1624	373
Canna	19/3,67	18,36	201,42	554	34	0,1427	401
-	19/3,68	18,43	202,71	558	34,2	0,1421	402
Goldentuft	19/3,90	19,55	228	626	37,7	0,1263	432
Cosmos	19/4,02	20,12	241,68	664	40	0,1188	447
Zinnia	19/4,12	20,6	253,35	695	41,9	0,1132	459
Dahlia	19/4,34	21,73	282	774	46,7	0,1018	489
-	37/3,09	21,67	278,71	768	48	0,1033	485
Meadowsweet	37/3,23	22,63	304	838	52,4	0,0948	513
Orchid	37/3,33	23,31	322,26	888	55,6	0,0896	531
Heuchera	37/3,36	23,56	329,35	908	56,8	0,0876	538
Varbena	37/3,49	24,45	354,71	978	61,1	0,0814	562
Violet	37/3,53	24,74	362,58	1000	62,5	0,0797	570
Patunia	37/3,61	25,32	380	1048	64,2	0,0758	585
Arbutus	37/3,72	26,06	402,84	1112	68,1	0,0715	605
-	37/3,73	26,14	405,35	1118	68,5	0,0712	608
Anemone	37/3,90	27,33	443,1	1222	73,3	0,0653	641
Cockscomb	37/3,96	27,73	456,06	1257	75,4	0,0633	657
Magnolia	37/4,07	28,55	483,42	1333	80	0,0597	675
Hawkweed	37/4,17	29,23	506,71	1396	83,8	0,0568	693
Bluebell	37/4,24	29,72	523,68	1445	86,6	0,0551	706
-	61/3,41	30,7	557,35	1539	96,1	0,0518	733
Marigold	61/3,43	30,89	563,93	1559	97,2	0,0512	738
Hawthorn	61/3,55	31,95	604,26	1670	104,1	0,0479	767
-	61/3,56	32,08	608,06	1679	102,7	0,0476	771
Narcissus	61/3,66	33,02	644,51	1781	108,8	0,045	797
-	61/3,70	33,37	658,71	1818	111,2	0,044	807
Columbine	61/3,78	34,01	684,84	1893	115,6	0,0423	825
-	61/3,84	34,63	709,42	1958	117,4	0,0407	842
Carnation	61/3,89	35,03	725,1	2004	119,9	0,04	854
-	61/3,98	35,85	760,06	2098	125,7	0,0381	877
Gladiolus	61/3,99	35,99	765,35	2116	126,5	0,0377	881
Coreopsis	61/4,09	36,91	805,68	2226	133,2	0,0358	907
-	61/4,11	37,04	810,71	2238	134,1	0,0358	910
-	61/4,23	38,15	861,42	2378	142,6	0,0335	942
-	61/3,57	39,28	912,06	2521	153,9	0,0316	975

Information Chart

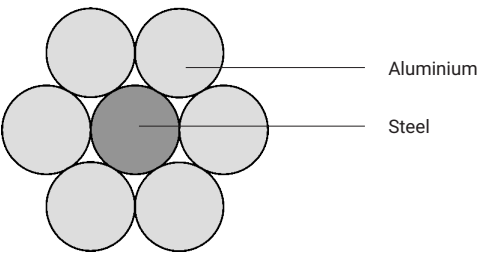
Code	Number and Wire Diameter	Overall Diameter	Cross Section	Net Weight	Rated Stenght	DC Resistance	Cuurent Carrying Capacity
	mm	mm	mm ²	kg / km	kN	Ohm / km	A
IEC Standards - IEC 61089/1991							
16	7/1,71	5,12	16	43,8	3,04	1,7896	
25	7/2,13	6,4	25	68,4	4,5	1,1453	
40	7/2,70	8,09	40	109,4	6,8	0,7158	
63	7/3,39	10,2	63	172,3	10,39	0,4545	
100	19/2,59	12,9	100	274,8	17	0,2877	
125	19/2,89	14,5	125	343,8	21,25	0,2302	
160	19/3,27	16,4	160	439,8	26,4	0,1798	
200	19/3,66	18,3	200	549,7	32	0,1439	
250	19/4,09	20,5	250	687,1	40	0,1151	
315	37/3,29	23	315	867,9	51,97	0,0916	
400	37/3,71	26	400	1102	64	0,0721	
450	37/3,94	27,5	450	1239,8	72	0,0641	
500	37/4,15	29	500	1377,6	80	0,0577	
560	37/4,39	30,7	560	1542,9	89,6	0,0515	
630	61/3,63	32,6	630	1738,3	100,8	0,0458	
710	61/3,85	34,6	710	1959,1	113,6	0,0407	
800	61/4,09	36,8	800	2207,4	128	0,0361	
900	61/4,33	39	900	2483,3	144	0,0321	
1000	61/4,57	41,1	1000	2759,2	160	0,0289	
1120	91/3,96	43,5	1120	3093,5	179,2	0,0258	
1250	91/4,18	46	1250	3452,6	200	0,0231	
1400	91/4,43	48,7	1400	3866,9	224	0,0207	
1500	91/4,58	50,4	1500	4143,1	240	0,0193	
Standards of Germany - EN 50182, DIN 48201 part 5							
16 - AL1	7/1,70	5,1	15,9	43,4	3,02	1,7986	110
24 - AL1	7/2,10	6,3	24,2	66,3	4,36	1,1787	144
34 - AL1	7/2,50	7,5	34,4	93,9	6,01	0,8317	180
49 - AL1	7/3,00	9	49,5	135,2	8,41	0,5776	225
48 - AL1	19/1,80	9	48,3	132,9	8,94	0,5944	225
66 - AL1	19/2,10	10,5	65,8	180,9	11,85	0,4367	270
93 - AL1	19/2,50	12,5	93,3	256,3	16,32	0,3081	340
117 - AL1	19/2,80	14	117	321,5	19,89	0,2456	390
147 - AL1	37/2,25	15,8	147,1	405,7	26,48	0,196	455
182 - AL1	37/2,50	17,5	181,6	500,9	31,78	0,1588	520
243 - AL1	61/2,25	20,3	242,5	671,1	43,66	0,1193	625
299 - AL1	61/2,50	22,5	299,4	828,5	52,4	0,0966	710
400 - AL1	61/2,89	26	400,1	1107,1	68,02	0,0723	855
500 - AL1	61/3,23	29,1	499,8	1382,9	82,47	0,0579	990
626 - AL1	91/2,69	32,6	626,2	1739,7	106,45	0,0464	1140
802 - AL1	91/3,35	36,9	802,1	2218,3	132,34	0,0362	1340
1000 - AL1	91/3,74	41,1	999,7	2777,3	159,95	0,0291	1540

ACSR

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Construction and Technical Info

Conductor	Cross Section Material	See the table Aluminium
Technical Information	They are used in medium and high voltage transmission lines. The aluminium wires and zinc coated steel wires are produced in accordance with TS EN 50182 standards. Conductors are stranded with seven or more wire as concentrically. If conductors are consist of more than one layer, then they are stranded in reverse direction to each other. Upon request they can be produced in accordance to DIN, BS, ASTM, NF, CSA and EN standards.	
Approvals	Certificates Available	TSE
Reference Standart	Main Alternative Alternative Alternative Alternative Alternative	ASTM B232/B232M IEC 61089/1997 EN 50182, DIN 48204 CSA C 49 BS/EN 50182 GOST (ГОСТ 839-80)

Application

Aluminium conductor steel-reinforced cable (ACSR) is a type of high-capacity, high-strength stranded conductor typically used in overhead power lines. The outer strands are high-purity aluminium, chosen for its good conductivity, low weight and low cost. The center strand is steel for additional strength to help support the weight of the conductor. Steel is higher strength than aluminium which allows for increased mechanical tension to be applied on the conductor. Steel also has lower elastic and inelastic deformation (permanent elongation) due to mechanical loading (e.g. wind and ice) as well as a lower coefficient of thermal expansion under current loading.

Information Chart

Code	Number and Wire Diameter		Overall Dia- meter	Cross Section			Net Weight	Rated Strength	DC Resistance	Current Carrying Capacity
	Aluminium	Steel		Aluminium	Steel	Total				
	mm	mm		mm	mm²	mm²				
Standards of USA - ASTM B232/B232M										
Turkey	6/1,68	1/1,68	5,04	13,29	2,21	15,5	53,6	5,2	2,157	105
Swan	6/2,12	1/2,12	6,36	21,16	3,55	24,71	85,3	8,3	1,356	140
Swanate	7/1,96	1/2,61	6,53	21,16	5,35	26,51	99,6	10,5	1,356	140
Sparrow	6/2,67	1/2,67	8,01	33,61	5,61	39,22	135,7	12,7	0,853	184
Sparate	7/2,47	1/3,30	8,24	33,61	8,52	42,13	158,7	16,1	0,853	184
Robin	6/3,00	1/3,00	9	42,39	7,1	49,49	171,1	15,8	0,6765	212
Raven	6/3,37	1/3,37	10,11	53,48	8,9	62,38	216,1	19,4	0,5364	242
Quail	6/3,78	1/3,78	11,34	67,42	11,23	78,65	272	23,6	0,4255	276
Pigeon	6/4,25	1/4,25	12,75	85,03	14,19	99,22	343	29,5	0,3373	315
Penguin	6/4,77	1/4,77	14,31	107,23	17,87	125,1	432,7	37,1	0,2676	357
Waxwing	18/3,09	1/3,09	15,45	135,16	7,48	142,64	430,2	30,6	0,2133	449
Partridge	26/2,57	7/2,00	16,28	135,16	22	157,16	545,9	50,3	0,2142	475
Ostrich	26/2,73	7/2,12	17,28	152	24,77	176,77	613,4	56,5	0,1906	492
Merlin	18/2,89	1/2,25	18,29	118	3,97	121,99	542,8	38,63	0,17188	519
Linnet	26/2,89	7/2,25	18,31	170,45	27,74	198,19	687,5	62,7	0,1699	529
Oriole	30/2,69	7/2,69	18,83	170,45	39,81	210,26	783,3	77	0,1704	535
Chickdee	18/3,77	1/3,77	18,85	201,42	11,16	212,58	641,3	44,2	0,1432	576
Brant	24/3,27	7/2,18	19,61	201,42	26,13	227,55	761	64,9	0,1438	584
Ibis	26/3,14	7/2,44	19,88	201,42	32,77	234,19	812,4	72,5	0,1438	587
Lark	30/2,92	7/2,92	20,44	201,42	46,97	248,39	925,2	90,3	0,1442	594
Pelican	18/4,14	1/4,14	20,7	241,68	13,42	255,1	769,7	52,5	0,1193	646
Flicker	24/3,58	7/2,39	21,49	241,68	31,29	272,97	913,5	76,1	0,1199	655
Hawk	26/3,44	7/2,68	21,8	241,68	39,35	281,03	975,1	86,7	0,1199	659
Hen	30/3,20	7/3,20	22,4	241,68	56,39	298,07	1110,3	105,9	0,1202	666
Osprey	18/4,47	1/4,47	22,35	282	15,68	297,68	897,7	60,9	0,1022	711
Parakeet	24/3,87	7/2,58	23,22	282	36,58	318,58	1065,6	88,1	0,1028	721
Dove	26/3,72	7/2,89	23,55	282	45,94	327,94	1138,6	100,5	0,1028	726
Eagle	30/3,46	7/3,46	24,21	282	65,81	347,81	1295,6	123,7	0,103	734
Peacock	24/4,03	7/2,69	24,2	306,58	39,74	346,32	1158,9	95,6	0,09449	760
Squab	26/3,87	26/1,525	24,51	306,58	49,94	356,52	1237	106,8	0,09449	765
Wood Duc	30/3,61	7/3,61	25,25	306,58	71,55	378,13	1408,4	128,5	0,09473	774
Teal	30/3,61	19/2,16	25,24	306,58	69,87	376,45	1396,6	133,4	0,09475	773
Kingbird	18/4,78	1/4,78	23,88	322,39	17,74	340,13	1026,6	69,8	0,8942	773
Swift	36/3,38	1/3,37	23,62	322,2	8,9	331,14	956,6	61,38	0,89751	769
Rook	24/4,14	7/2,76	24,84	322,26	41,81	364,07	1217,6	101	0,08989	784
Grosbeak	26/3,97	7/3,09	25,15	300,26	52,52	374,78	1300,8	112,1	0,08989	789
Scoter	30/3,70	7/3,70	25,88	322,26	75,22	397,48	1480,7	134,8	0,09011	798
Egret	30/3,70	19/2,22	25,9	322,26	7,48	395,74	1469	140,1	0,09012	798
Flamingo	24/4,23	7/2,82	25,4	337,74	43,81	381,55	1276,6	105,4	0,08576	807
Gannet	26/4,07	7/3,16	28,3	337,81	55,03	392,84	1363,3	117,4	0,08576	812
Stilt	24/4,39	7/2,92	26,31	362,64	46,97	409,61	1370,4	113,4	0,07989	844
Starling	26/4,21	7/3,28	26,68	362,58	59,03	421,61	1463,7	126,3	0,07992	849
Redwing	30/3,92	19/2,35	27,43	362,58	82,64	445,22	1650,6	153,9	0,08009	859
Coot	36/3,77	1/3,77	26,39	401,9	11,2	413,1	1198	74,7	0,07397	884
Tern	45/3,38	7/2,25	27,03	402,84	27,87	430,71	1331,8	98,3	0,07192	887
Condor	54/3,08	7/3,08	27,72	402,84	52,19	455,03	1520,7	125,4	0,07192	889
Cuckoo	24/4,62	7/3,08	27,74	402,9	52,2	455,1	1522,2	124,1	0,0719	887
Drake	26/4,44	7/3,45	28,11	402,84	65,61	468,45	1626,4	140,1	0,07192	907
Mallard	30/4,14	19/2,48	28,96	402,84	91,87	494,71	1836	170,8	0,07208	918
Ruddy	45/3,59	7/2,40	28,73	455,81	31,54	487,35	1507,3	108,3	0,06356	958
Canary	54/3,28	7/3,28	29,52	456,06	59,1	515,16	1723,1	141,9	0,06352	961
Rail	45/3,70	7/2,47	29,61	483,42	33,42	516,84	1598,1	115,2	0,05994	993
Cardinal	54/3,38	7/3,38	30,42	483,42	62,65	546,07	1825,9	150,3	0,05994	996
Ortolan	45/3,85	7/2,57	30,81	523,68	36,19	559,87	1730,5	123,2	0,05531	1043
Curlew	54/3,52	7/3,52	31,68	523,68	67,87	591,55	1977,6	162,8	0,05531	1047
Bluejay	45/4,00	7/2,66	31,98	563,93	39,03	602,96	1866	132,6	0,05161	1092
Finch	54/3,65	19/2,19	32,85	563,93	71,48	635,41	2127,8	173,9	0,05161	1093
Bunting	45/4,14	7/2,76	33,12	604,26	41,55	645,81	1996,9	141,9	0,0482	1139
Grackle	54/3,77	19/2,27	33,97	604,26	76,52	680,78	2278,1	185,9	0,0482	1140
Bittern	45/4,27	7/2,85	34,17	644,1	44,52	688,62	2130,8	151,7	0,04518	1184
Pheasant	54/3,90	19/2,34	35,1	644,51	81,68	726,19	2431,4	193,9	0,04518	1187
Dipper	45/4,40	7/2,92	35,16	685,16	47,1	732,26	2263	161	0,04259	1229
Martin	54/4,02	19/2,41	36,17	684,84	86,71	771,55	2581,7	205,9	0,04259	1232
Bobolink	45/4,53	7/3,02	36,24	725,16	50,32	775,48	2397,2	170,8	0,04016	1272
Plover	54/4,14	19/2,48	37,24	725,16	91,81	816,97	2734,9	218	0,04016	1275
Nuthatch	45/4,65	7/3,10	37,2	765,16	52,9	818,06	2529,6	178,4	0,03802	1313
Parrot	54/4,25	19/2,55	38,25	765,16	97,16	862,32	2883,7	230,4	0,03802	1318

Code	Number and Wire Diameter		Overall Diameter	Cross Section			Net Weight	Rated Strength	DC Resistance
	Aluminium	Steel		Aluminium	Steel	Total			
	mm	mm	mm	mm ²	mm ²	mm ²	kg / km	kN	Ohm / km
Standards of IEC - IEC 61089/1997									
16	6/1,81	1/1,81	5,43	15	2,56	17,9	59		17,923
25	6/2,26	1/2,26	6,78	24	4	28	92,1	9	11,471
40	6/2,85	1/2,85	8,55	38	6,4	44,8	147,4	14,21	0,7169
63	6/3,58	1/3,58	10,7	60	10,08	70,6	232,2	21,17	0,4552
100	6/4,51	1/4,51	13,5	96	16	112	368,6	31,84	0,2868
125	18/2,95	1/2,95	14,8	123	6,85	130	384,3	29,18	0,2304
125	26/2,43	7/1,89	15,4	120	19,6	140	460,8	44,49	0,2308
160	18/3,34	1/3,34	16,7	158	8,77	167	491,9	3,638	0,18
160	26/2,74	7/2,13	17,4	154	25	179	589,9	56,18	0,1803
200	18/3,74	1/3,74	18,7	197	10,96	208	614,9	43,62	0,144
200	26/3,07	7/2,39	19,4	192	31,3	223	737,2	69,27	0,1443
250	22/3,76	7/2,09	21,3	244	24	268	830,9	67,8	0,1153
250	26/3,43	7/2,67	21,7	240	39,1	279	921,5	86,58	0,1154
315	45/2,96	7/1,97	23,7	310	21,4	331	996,4	78,33	0,0917
315	26/3,85	7/3,02	24,4	303	49,3	352	11,61,1	107,58	0,0916
400	45/3,34	7/2,22	26,7	393	27,2	420	1265,3	97,5	0,0722
400	54/3,02	7/3,02	27,2	387	50,2	438	1402,9	124,2	0,0723
450	45/3,54	7/2,36	28,3	442	30,6	473	1423,4	107,48	0,0642
450	54/3,21	7/3,21	28,9	436	56,5	492	1578,2	139,72	0,0642
500	45/3,73	7/2,49	29,8	492	34	525	1581,6	119,42	0,0578
500	54/3,38	7/3,38	30,4	484	62,8	547	1753,6	153,99	0,0578
560	45/3,95	7/2,63	31,6	550	38,1	589	1771,4	133,75	0,0516
560	54/3,58	19/2,15	32,2	543	68,8	612	1956,3	169,36	0,0516
630	45/4,19	7/2,79	33,5	619	42,8	662	1992,8	150,47	0,0458
630	54/3,79	19/2,28	34,2	611	77,3	688	2200,9	190,52	0,0459
710	45/4,44	7/2,96	35,6	698	48,3	746	2245,8	169,57	0,0407
710	54/4,03	19/02,1942	36,3	688	87,2	775	2480,3	214,72	0,0407
800	72/3,74	07,02,1949	37,4	791	34,2	826	2412,8	167,67	0,0361
800	84/3,45	07,03,1945	37,9	784	65,3	849	2598,9	206,37	0,0362
800	54/4,28	19/2,57	38,5	775	98,2	874	2794,7	241,94	0,0361
900	72/3,97	7/2,65	39,7	890	38,5	929	2714,4	188,63	0,0321
900	84/3,66	7/3,66	40,2	882	73,5	955	2923,8	224,82	0,0321
1000	72/4,18	7/2,79	41,8	989	42,7	1032	3016	209,59	0,0289
1120	72/4,43	19/1,77	44,33	1108	46,8	1155	3372,6	233,48	0,0258
1120	84/4,08	19/2,45	46,8	1098	89,4	1187	3628,4	282,88	0,0258
1250	72/4,68	19/1,87	46,8	1237	52,5	1289	3764,1	260,58	0,0231
1250	84/4,31	19/2,59	47,4	1225	99,8	1325	4049,5	315,72	0,0231

Information Chart

Code	Number and Wire Diameter		Overall Dia- meter	Cross Section			Net Weight	Rated Strength	DC Resistance	Current Carrying Capacity
	Aluminium	Steel		Aluminium	Steel	Total				
	mm	mm		mm	mm²	mm²				
Standards of Germany - EN 50182, DIN 48204										
15 - AL1/3 - ST1A	6/1,80	1/1,80	5,4	15,3	2,5	17,9	62	5,81	1,8793	105
24 - AL1/4 - ST1A	6/2,25	1/2,25	6,8	23,8	4	27,8	96	9,02	1,2028	140
34 - AL1/6 - ST1A	6/2,70	1/2,70	8,1	34,3	5,7	40	139	12,7	0,8353	170
44 - AL1/32 - ST1A	14/2,00	7/2,40	11,2	44	31,7	75,7	369	45,46	0,6573	-
48 - AL1/8 - SAT1A	6/3,20	1/3,20	9,6	48,3	8	56,3	195	17,18	0,5946	210
51 - AL1/30 - SAT1A	12/2,33	7/2,33	11,7	51,2	29,8	81	375	44,28	0,5644	-
70 - AL1/11 - ST1A	26/1,85	7/1,44	11,7	69,9	11,4	81,3	282	26,31	0,413	290
94 - AL1/15 - ST1A	26/2,15	7/1,67	13,6	94,4	15,3	110	381	35,17	0,3058	350
97 - AL1/56 - ST1A	12/3,20	7/3,20	16	96,5	56,3	153	707	80,2	0,2992	-
106 - AL1/76 - ST1A	14/3,10	19/2,25	17,5	105,7	75,5	182	885	106,69	0,2736	-
122 - AL1/20 - ST1A	26/2,44	7/1,90	15,5	121,6	19,8	141	491	44,94	0,2374	410
122 - AL1/71 - ST1A	12/3,60	7/3,60	18	122	71,3	193	895	98,16	0,2364	-
128 - AL1/30 - ST1A	30/2,33	7/2,33	16,1	127,9	29,8	158	587	57,86	0,2259	425
149 - AL1/24 - ST1A	26/2,70	7/2,10	17,1	148,9	24,2	173	601	54,37	0,1939	470
172 - AL1/40 - ST1A	30/2,70	7/2,70	18,9	171,8	40,1	212	788	77,01	0,1682	520
184 - AL1/30 - ST1A	26/3,00	7/2,33	19	183,8	29,8	214	741	66,28	0,1571	535
209 - AL1/34 - ST1A	26/3,20	7/2,49	20,3	209,1	34,1	243	844	74,94	0,138	590
212 - AL1/49 - ST1A	30/3,00	7/3,00	21,3	212,1	49,5	262	973	92,25	0,1363	610
231 - AL1/30 - ST1A	24/3,50	7/2,33	21	230,9	29,8	261	871	73,09	0,1249	630
243 - AL1/39 - ST1A	26/3,45	7/2,68	21,9	243	39,5	283	980	86,46	0,1188	645
264 - AL1/34 - ST1A	24/3,74	7/2,49	22,4	263,7	34,1	298	994	82,94	0,1094	680
304 - AL1/47 - ST1A	26/3,86	7/3,00	24,5	304,3	49,5	354	1227	105,09	0,0949	740
305 - AL1/39 - ST1A	54/2,68	7/2,68	24,1	304,6	39,5	344	1151	99,3	0,0949	740
339 - AL1/30 - ST1A	48/3,00	7/2,33	25	339,3	29,8	369	1171	92,56	0,0851	790
382 - AL1/49 - ST1A	54/3,00	7/3,00	27	382	49,5	432	1443	120,91	0,0757	840
386 - AL1/34 - ST1A	48/3,20	7/2,49	26,7	386	34,1	420	1334	104,31	0,0748	850
434 - AL1/56 - ST1A	54/3,20	7/3,20	28,8	434,3	56,3	491	1641	136,27	0,0666	900
449 - AL1/39 - ST1A	48/3,45	7/2,68	28,7	448,7	39,5	488	1549	120,19	0,0644	920
490 - AL1/64 - ST1A	54/3,40	7/3,40	30,6	490,3	63,6	554	1853	152,85	0,059	960
494 - AL1/34 - ST1A	45/3,74	7/2,49	29,9	494,4	34,1	528,4	1632	117,96	0,0584	985
511 - AL1/45 - ST1A	48/3,68	7/2,87	30,7	510,15	45,3	555,8	1765	133,31	0,0566	995
550 - AL1/71 - ST1A	54/3,60	7/3,60	32,4	550	71,3	621	2077	166,32	0,0526	1020
562 - AL1/49 - ST1A	48/3,86	7/3,00	32,2	561,7	49,5	611	1940	146,28	0,0514	1040
571 - AL1/39 - ST1A	45/4,02	7/2,68	32,2	571,2	39,5	610,6	1887	136,4	0,0506	1050
653 - AL1/45 - ST1A	45/4,30	7/2,87	34,4	653,5	45,3	698,8	2160	156,18	0,0442	1120
679 - AL1/86 - ST1A	54/4,00	19/2,40	36	678,8	86	765	2550	206,56	0,0426	1150
1046 - AL1/45 - ST1A	72/4,30	7/2,87	43	1045,6	45,3	1010	3248	218,92	0,0277	1580

Code	Number and Wire Diameter		Overall Diameter	Cross Section			Net Weight	Rated Strength	DC Resistance	Current Carrying Capacity
	Aluminium	Steel		Aluminium	Steel	Total				
	mm	mm		mm	mm²	mm²				
Standards of Canada - CSA C 49										
Wren	6/1,33	1/1,33	3,99	8,39	1,42	9,81	34	3,3	3,4226	63
Warbler	6/1,50	1/1,50	4,5	10,59	1,34	11,93	43	4,2	2,7139	67
Turkey	6/1,68	1/1,68	5,04	13,29	2,19	15,48	54	5,2	2,1535	86
Thrush	6/1,89	1/1,89	5,67	16,77	2,77	19,54	68	6,5	1,7077	93
Swan	6/2,12	1/2,12	6,36	21,16	3,55	24,71	85	8,2	1,3537	109
Swallow	6/2,38	1/2,38	7,14	26,65	4,45	31,09	108	10	1,0738	126
Sparrow	6/2,67	1/2,67	8,01	33,61	5,61	39,22	136	12,4	0,8504	140
Robin	6/3,00	1/3,00	9	42,39	7,1	49,49	171	15,5	0,6752	162
Raven	6/3,37	1/3,37	10,11	53,48	8,9	62,38	215	19	0,5351	186
Quail	6/3,78	1/3,78	11,34	67,42	11,23	78,65	273	10,8	0,4245	211
Pigeon	6/4,25	1/4,25	12,75	85,03	14,19	99,22	343	29,7	0,3366	241
Penguin	6/4,77	1/4,77	14,31	107,23	17,87	125,1	433	37,5	0,2671	276
Owl	6/5,36	7/1,74	16,09	135,16	17,55	152,7	508	42,5	0,2119	322
Waxwing	18/3,09	1/3,09	15,15	135,16	7,48	142,6	430	31,5	0,2126	319
Partridge	26/2,57	7/2,00	16,28	135,16	22	157,2	545	50,01	0,2136	321
Phoebe	18/3,28	1/3,28	16,4	152	8,45	160,5	483	35,5	0,1893	341
Ostrich	26/2,73	7/2,12	17,28	152	24,71	176,7	613	56,2	0,19	343
Piper	30/2,54	7/2,54	17,78	152	35,48	187,5	697	68,6	0,1903	348
Merlin	18/3,47	1/3,47	17,35	170,45	9,48	179,9	543	39,8	0,1686	364
Linnet	26/2,89	7/2,25	18,31	170,45	27,81	198,3	687	62,5	0,1696	368
Oriole	30/2,69	7/2,69	18,83	170,45	39,81	210,3	783	75,8	0,1696	370
Chickadee	18/3,77	1/3,77	18,85	201,42	11,16	212,6	641	46,3	0,143	402
Ibis	26/3,14	7/2,44	19,88	201,42	32,77	234,2	813	72	0,1434	404
Lark	30/2,92	7/2,92	20,44	201,42	46,97	248,4	923	88,8	0,1437	410
Pelican	18/4,14	1/4,14	20,7	241,68	13,42	255,1	769	54,8	0,1191	449
-	22/3,74	7/2,08	21,2	241,68	23,74	265,4	853	68,6	0,1194	452
Hawk	26/3,44	7/2,67	21,77	241,68	39,42	281,1	975	86,5	0,1194	450
Hen	30/3,20	7/3,20	22,4	241,68	56,39	298,1	1108	103,9	0,1198	453
Heron	30/3,28	7/3,28	22,96	253,35	59,1	312,5	1162	108,8	0,1142	469
-	22/4,04	7/2,24	22,88	282	27,68	309,7	993	79,1	0,1024	496
Dove	26/3,72	7/2,89	23,55	282	45,94	327,9	1137	99,9	0,1024	495
Eagle	30/3,46	7/3,46	24,22	282	65,81	347,8	1293	121,2	0,1027	497
-	22/4,21	7/2,34	23,86	306,58	30,07	336,7	1080	84,9	0,0942	519
Duck	54/2,69	7/2,69	24,21	306,58	39,81	346,4	1159	100,1	0,0945	520
-	22/4,32	7/2,40	24,48	322,26	31,61	353,9	1135	84,8	0,0896	532
Grosbeak	26/3,97	7/3,09	25,15	322,26	52,45	374,7	1299	111,2	0,0896	530
Egret	30/3,70	19/2,22	25,9	322,26	73,55	395,8	1467	140,6	0,0896	542
Goose	54/2,76	7/2,76	24,84	322,26	41,74	364	1217	105,2	0,0899	534
-	42/3,20	7/1,78	24,54	337,74	17,35	355,1	1068	78,6	0,0856	546
Gull	54/2,82	7/2,82	25,38	337,74	43,81	381,6	1277	109,2	0,0856	553
Starling	26/4,21	7/3,28	26,68	362,58	59,03	421,6	1462	125	0,0797	575
Redwing	30/3,92	19/2,35	27,43	362,58	82,58	445,2	1648	153,9	0,0797	581
-	42/3,31	7/1,84	25,38	362,58	18,65	381,2	1148	84,3	0,0797	573
Crow	54/2,92	7/2,92	26,28	362,58	46,97	409,6	1369	117,2	0,0797	577
Drake	26/4,44	7/3,45	28,11	402,84	65,61	468,5	1624	139	0,0715	611
Mallard	30/4,14	19/2,48	28,96	402,8	91,84	494,7	1832	171	0,0719	618
-	42/3,50	7/1,94	26,82	402,8	20,71	423,6	1274	93,6	0,0719	610
Condore	54/3,08	7/3,08	27,72	402,8	52,19	455	1521	127	0,0719	615
-	42/3,67	7/2,04	28,14	443,1	22,84	465,9	1402	102	0,0653	645
Crane	54/3,23	7/3,23	29,07	443,1	57,48	500,7	1674	133	0,0653	649
-	42/3,72	7/2,07	28,53	456,1	23,42	479,5	1442	105	0,0633	655
Canary	54/3,28	7/3,28	29,52	456,1	59,1	515,2	1724	144	0,0633	660
-	42/3,38	7/2,13	29,87	483,4	24,84	508,3	1528	109	0,0597	678
Cardinal	54/3,38	7/3,38	30,42	483,4	62,65	546,1	1826	152	0,0597	682
-	42/3,99	7/2,21	30,57	523,7	26,97	550,7	1657	118	0,0551	710
Curlew	54/3,51	7/3,51	31,59	523,7	67,87	591,6	1978	165	0,0551	715
-	42/4,41	7/2,30	31,74	563,9	28,97	592,9	1783	126	0,0512	741
Finch	54/3,65	19/2,19	32,85	563,9	71,55	636,8	2121	179	0,0512	746
-	42/4,28	7/2,38	32,82	604,3	31,1	635,4	1911	135	0,0479	772
Grackle	54/3,77	19/2,27	33,97	604,26	76,58	680,8	2271	192	0,0479	776
-	42/4,42	7/2,46	33,9	644,51	33,16	677,7	2039	144	0,0449	800
Pheasant	54/3,90	19/2,34	35,1	644,51	81,68	726,2	2421	199	0,0449	805
-	42/4,56	7/2,53	34,95	684,84	35,23	720,1	2166	153	0,0423	829
Martin	54/4,02	19/2,41	36,17	684,84	86,71	771,6	2573	212	0,0423	835
-	42/4,69	7/2,61	35,97	725,1	37,35	762,5	2294	162	0,0397	858
Plover	54/4,14	19/2,48	37,24	725,1	91,87	817	2725	224	0,04	862
-	42/4,82	7/2,67	36,93	765,35	39,35	804,7	2420	171	0,0377	885

Information Chart

Code	Number and Wire Diameter		Overall Diameter	Cross Section			Net Weight	Rated Strength	DC Resistance	Curent Carrying Capacity
	Aluminium	Steel		Aluminium	Steel	Total				
	mm	mm		mm	mm²	mm²				
Standards of Canada - CSA C 49										
Parrot	54/4,25	19/2,55	38,25	765,4	96,84	862,2	2877	237	0,0377	890
-	48/4,36	7/3,60	38,58	805,7	71,1	876,2	2779	212	0,0358	929
Falcon	54/4,36	19/2,62	39,26	805,7	102,1	907,8	3028	250	0,0358	917
-	72/3,77	7/2,52	37,72	805,7	34,84	840,5	2498	176	0,0358	910
Bantam	3/1,68	4/1,68	5,04	6,65	8,84	15,49	87,8	11,7	4,3218	61
Maggpie	3/2,12	4/2,12	6,36	10,58	14,13	24,71	139,7	18,6	2,7077	77
Shrike	3/2,67	4/2,67	8,01	16,84	22,45	39,29	222,6	28,6	1,7054	99
Snipe	3/3,37	4/3,37	10,11	26,17	35,68	62,45	354,1	43,9	1,0718	132
Loon	3/3,78	4/3,78	11,34	33,68	44,97	78,65	445,8	55,3	0,8514	149
Grouse	8/2,54	1/4,24	9,32	40,52	14,13	54,65	221,2	23,1	0,7077	157
Petrel	12/2,34	7/2,34	11,7	51,61	30,01	81,67	376,9	43,8	0,5591	193
Minorca	12/2,44	7/2,44	12,2	56,13	32,77	88,9	311,3	47,7	0,5134	198
Leghorn	12/2,69	7/2,69	13,45	68,19	39,81	108	498,5	57,5	0,4226	221
Guinea	12/2,92	7/2,92	14,6	80,68	46,97	127,6	587,8	67,6	0,3579	244
Dotterell	12/3,08	7/3,08	15,4	89,48	52,19	191,7	654,8	73	0,3215	260
Dorking	12/3,20	7/3,20	16	96,71	56,39	153,1	706,9	78,9	0,2982	271
Brahma	16/2,86	19/2,48	18,12	102,97	91,87	194,8	1004,9	122,5	0,2815	287
Auk	8/4,05	7/2,25	14,83	102,84	92,32	195,2	500	49,6	0,2789	276
Cochin	12/3,37	7/3,37	16,85	107,1	62,45	169,6	782,8	87,4	0,2694	288
Standards of France - EN 50182										
28 - AL1/9 - ST1A	9/2,00	3/2,00	8,3	28,3	9,42	37,7	152	16,26	1,018 7	
38 - AL1/22 - ST1A	12/2,00	7/2,00	10	37,7	22	59,7	276	32,7	0,766 0	
48 - AL1/28 - ST1A	12/2,25	7/2,25	11,3	47,7	27,8	75,5	350	41,15	0,605 2	
59 - AL1/34 - ST1A	12/2,50	7/2,50	12,5	58,9	34,4	93,3	431	49,48	0,490 2	
94 - AL1/22 - ST1A	30/2,00	7/2,00	14	94,2	22	116,2	433	43,17	0,306 7	
119 - AL1/28 - ST1A	30/2,25	7/2,25	15,8	119,3	27,8	147,1	547	54,03	0,242 3	
147 - AL1/34 - ST1A	30/2,50	7/2,50	17,5	147,3	34,4	181,6	676	64,94	0,196 3	
185 - AL1/43 - ST1A	30/2,80	7/2,80	19,6	184,7	43,1	227,8	848	80,54	0,156 5	
234 - AL1/55 - ST1A	30/3,15	7/3,15	22,1	233,8	54,6	288,3	1073	98,58	0,123 6	
Standards of Spain - EN 50182										
LA-30	6 / 2,38	1 / 2,38	2,38	7,14	26,7	4,5	31,1	107,8	9,74	1,0736
LA-56	6 / 3,15	1 / 3,15	3,15	9,45	46,8	7,8	54,6	188,8	16,29	0,6129
LA-78	6 / 3,78	1 / 3,78	3,78	11,34	67,3	11,2	78,6	271,8	23,12	0,4256
LA-110	30 / 2,00	7 / 2,00	6	14	94,2	22	116,2	432,5	43,17	0,3067
LA-145	30 / 2,25	7 / 2,25	6,75	15,75	119,3	27,8	147,1	547,4	54,03	0,2423
LA-180	30 / 2,50	7 / 2,50	7,5	17,5	147,3	34,4	181,6	675,8	64,94	0,1963
LA-280 HAWK	26 / 3,44	7 / 2,68	8,04	21,8	241,6	39,5	281,1	976,2	84,94	0,1195
LA-380 GULL	54 / 2,85	7 / 2,82	8,46	25,4	337,3	43,7	381	1274,6	107,18	0,0857
LA-455 CONDOR	54 / 3,08	7 / 3,08	9,24	2,7	402,3	52,2	454,5	1520,5	123,75	0,0719
LA-545 CARDINAL	54 / 3,38	7 / 3,38	10,14	30,42	484,5	62,8	547,3	1831,1	149,04	0,0597
LA-635 FINCH	54 / 3,65	19 / 2,19	10,95	32,85	565	71,6	636,6	2123	174,14	0,0512

Code	Number and Wire Diameter		Overall Diameter	Cross Section			Net Weight	Rated Strength	DC Resistance	Curent Carrying Capacity
	Aluminium	Steel		Aluminium	Steel	Total				
	mm	mm		mm	mm²	mm²				
Standards of UK - BS EN 50182										
11 - AL1/2 - ST1A	6/1,50	1/1,50	4,5	10,6	1,77	12,4	42,8	4,14	2,7027	67
21 - AL1/3 - ST1A	6/2,11	1/2,11	6,33	21	3,5	24,5	84,7	7,87	1,3659	109
26 - AL1/4 - ST1A	6/2,36	1/2,36	7,08	26,24	4,38	30,62	106	9,61	1,093	126
32 - AL1/5 - ST1A	6/2,59	1/2,59	7,77	31,61	5,27	36,88	128	11,45	0,9077	134
37 - AL1/6 - ST1A	6/2,79	1/2,79	8,37	36,7	6,11	42,8	148,1	13,21	0,7812	147
42 - AL1/7 - ST1A	6/3,00	1/3,00	9	42,41	7,07	49,48	172	15,2	0,6766	161
53 - AL1/9 - ST1A	6/3,35	1/3,35	10,05	52,88	8,82	61,7	214	18,35	0,5426	185
63 - AL1/11 - ST1A	6/3,66	1/3,66	11	63,1	10,5	73,6	254,9	21,67	0,454	174
63 - AL1/37 - ST1A	12/2,59	7/2,59	13	63,2	36,9	100,1	463	52,79	0,4568	246
73 - AL1/43 - ST1A	12/2,79	7/2,79	13,95	73,37	42,83	116,2	538	61,2	0,3936	268
75 - AL1/13 - ST1A	6/3,99	1/3,99	12	75	12,5	87,5	302,9	25,76	0,382	193
79 - AL1/13 - ST1A	6/4,10	1/4,10	12,3	78,8	13,1	92,4	318,3	27,06	0,3635	231
84 - AL1/14 - ST1A	6/4,22	1/4,22	12,7	83,9	14	97,9	338,8	28,81	0,3415	240
95 - AL1/16 - ST1A	6/4,50	1/4,50	13,5	95,4	15,9	111,3	385,3	32,76	0,3003	248
105 - AL1/17 - ST1A	6/4,72	1/4,72	14,2	105	17,5	122,5	423,8	36,04	0,273	273
105 - AL1/14 - STA1	6/4,72	7/1,57	14,15	105	13,5	118,5	394	32,7	0,2733	278
131 - AL1/7 - ST1A	30/2,36	7/2,36	16,5	131,2	30,6	161,8	602,2	57,87	0,2202	323
132 - AL1/14 - ST1A	26/2,54	7/1,91	15,9	131,7	20,1	151,8	520,7	45,86	0,2192	311
132 - AL1/20 - ST1A	18/3,05	1/3,05	15,3	131,5	7,31	138,8	418,8	29,74	0,2188	314
158 - AL1/31 - ST1A	30/2,59	7/2,59	18,13	158,1	36,8	194,9	726	69,2	0,1828	355
159 - AL1/37 - ST1A	18/3,35	1/3,35	16,75	158,7	8,8	167,5	506	35,7	0,1815	349
183 - AL1/9 - ST1A	30/2,79	7/2,79	19,53	183,4	42,8	226,2	842	79,8	0,1576	386
184 - AL1/2 - ST1A	18/3,61	1/3,61	18,05	184,3	10,2	194,5	587	41,1	0,1563	383
211 - AL1/4 - ST1A	18/3,86	1/3,86	19,3	210,6	11,7	222,3	671	46,55	0,1367	415
212 - AL1/3 - ST1A	30/3,00	7/3,00	21	212,1	49,2	261,5	974	92,25	0,1363	421
238 - AL1/5 - ST1A	30/3,18	7/3,18	22,3	238,3	55,6	293,9	1093,4	100,47	0,1213	448
264 - AL1/6 - ST1A	30/3,35	7/3,35	23,5	264,4	61,7	326,1	1213,4	111,5	0,1093	481
324 - AL1/7 - ST1A	30/3,71	7/3,71	26	324,3	75,7	400	1488,2	135,13	0,0891	542
374 - AL1/11 - ST1A	54/2,97	7/2,97	26,7	374,1	48,5	422,6	1413,8	118,88	0,0773	588
375 - AL1/9 - ST1A	30/3,99	7/3,99	27,9	375,1	87,5	462,6	1721,3	156,3	0,0771	592
382 - AL1/37 - ST1A	54/3,00	7/3,00	27	381,7	49,5	431,2	1442,5	121,3	0,0758	595
429 - AL1/43 - ST1A	54/3,18	7/3,18	28,62	428,9	55,6	484,5	1621	131,9	0,0674	635
430 - AL1/13 - ST1A	30/4,27	7/4,27	29,9	429,6	100,2	529,8	1971,4	179	0,0673	639
477 - AL1/13 - ST1A	30/4,50	7/4,50	31,5	477,1	111,3	588,4	2189,5	198,8	0,0606	679
476 - AL1/14 - ST1A	54/3,35	7/3,35	30,2	476	61,7	537,7	1798,8	146,4	0,0608	677
528 - AL1/16 - ST1A	54/3,53	7/3,53	31,8	528,5	68,5	597	1997,3	159,92	0,0547	763

Information Chart

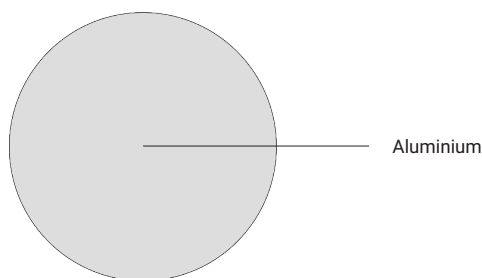
Code	Number and Wire Diameter		Diameter Core	Conductors	Cross Section			Net Weight	Rated Strength	DC Resistance
	Aluminium	Steel			Aluminium	Steel	Total			
	mm	mm			mm²	mm²	mm²			
Standards of Russia - GOST (ГОСТ 839-80)										
10 / 1,8	6 / 1,50	1 / 1,50	4,5	1,5	10,6	1,77	12,37	42,7	4089	27,064
16 / 2,7	6 / 1,85	1 / 1,85	5,6	1,9	16,13	2,69	18,82	64,9	6220	17,818
25 / 4,2	6 / 2,30	1 / 2,30	6,9	2,3	24,93	4,15	29,08	100,3	9296	11,521
35 / 6,2	6 / 2,80	1 / 2,80	8,4	2,8	36,95	6,16	43,1	148	13524	0,7774
40 / 6,7	6 / 2,91	1 / 2,91	8,74	2,91	39,91	6,65	46,56	161,3	14400	0,7172
50 / 8,0	6 / 3,20	1 / 3,20	9,6	3,2	48,25	8,04	56,3	195	17112	0,5951
63 / 10,5	6 / 3,66	1 / 3,66	10,97	3,66	63,13	10,52	73,65	254	21630	0,4553
70 / 11	6 / 3,80	1 / 3,80	11,4	3,8	68,05	11,34	79,39	276	24130	0,4218
70 / 72	18 / 2,20	19 / 2,20	15,4	11	68,42	72,23	140,65	755	96826	0,4194
95 / 16	6 / 4,50	1 / 4,50	13,5	4,5	95,43	15,9	111,33	385	33369	0,3007
95/141	24 / 2,20	37 / 2,20	19,8	15,4	91,23	140,65	231,88	1357	180775	0,3146
100 / 16,7	6 / 4,61	1 / 4,61	13,82	4,61	100,15	16,69	116,84	403,2	34333	0,7868
120 / 19	26 / 2,40	7 / 1,85	15,2	5,6	117,62	18,82	136,44	471	41521	0,244
120 / 27	30 / 2,20	7 / 2,20	15,4	6,6	114,04	26,61	140,65	528	49465	0,2531
125 / 6,9	18 / 2,97	1 / 2,97	14,67	2,97	124,7	6,93	131,63	397,9	29167	0,2304
125 / 20,4	26 / 2,47	7 / 1,92	15,67	5,77	124,58	20,27	144,85	503,5	45694	0,2308
150 / 19	24 / 2,80	7 / 1,85	16,8	5,6	147,78	18,82	166,6	554	46307	0,2046
150 / 24	26 / 2,70	7 / 2,10	17,1	6,3	148,86	24,25	173,11	599	52279	0,2049
150 / 34	30 / 2,50	7 / 2,50	17,5	7,5	147,26	34,36	181,62	675	62643	0,2061
160 / 8,9	18 / 3,36	1 / 3,36	16,82	3,36	159,6	8,87	168,47	509,4	36178	0,18
160 / 26,1	26 / 2,80	7 / 2,18	17,74	6,53	160,1	26,13	186,22	644,5	57689	0,1803
185 / 24	24 / 3,15	7 / 2,10	18,9	6,3	187,04	24,25	211,28	705	58075	0,154
185 / 29	26 / 2,98	7 / 2,30	18,8	6,9	181,34	29,08	210,42	728	62055	0,1591
185 / 43	30 / 2,80	7 / 2,80	19,6	8,4	184,73	43,1	227,83	846	77767	0,1559
185 / 128	54 / 2,10	37 / 2,10	23,1	14,7	187,04	128,15	315,19	1525	183816	0,1543
200 / 11,1	18 / 3,76	1 / 3,76	18,81	3,76	199,87	11,1	210,97	636,7	44222	0,144
200 / 32,6	26 / 3,13	7 / 2,43	19,82	7,3	200,06	32,46	232,52	805,6	70134	0,1442
205 / 27	24 / 3,30	7 / 2,20	19,8	6,6	205,27	26,61	231,88	846	63740	0,1407
240 / 32	24 / 3,60	7 / 2,40	21,6	7,2	244,29	31,67	275,96	921	75050	0,1182
240 / 39	26 / 3,40	7 / 2,65	21,6	8	236,06	38,61	274,67	952	80895	0,1222
240 / 56	30 / 3,20	7 / 3,20	22,4	9,6	241,27	56,3	297,57	1106	98253	0,1197
300 / 39	24 / 4,00	7 / 2,65	24	8	301,59	38,61	340,2	1132	90574	0,0958
300 / 48	26 / 3,80	7 / 2,95	24,1	8,9	294,87	47,84	342,72	1186	100623	0,0978
300 / 66	30 / 3,50	19 / 2,10	24,5	10,5	288,63	65,81	354,44	1313	117520	0,1
300 / 67	30 / 3,50	7 / 3,50	24,5	10,5	288,63	67,35	355,98	1323	126270	0,1
300 / 204	54 / 2,65	37 / 2,65	29,2	18,6	297,84	204,07	501,91	2428	284579	0,0968
315 / 21,8	45 / 2,99	7 / 1,99	23,83	5,97	315,97	21,77	337,74	1039,2	79030	0,0917
315 / 51,3	26 / 3,93	7 / 3,05	24,87	9,16	315,39	51,14	366,53	1268,9	106834	0,0916
330 / 30	48 / 2,98	7 / 2,30	24,8	6,9	334,78	29,08	363,87	1152	88848	0,0861
330 / 43	54 / 2,80	7 / 2,80	25,2	8,4	332,51	43,1	375,61	1255	103784	0,0869
400 / 27,7	45 / 3,36	7 / 2,24	26,91	6,73	399,01	27,59	426,59	1319,7	93356	0,0722
400 / 51,9	54 / 3,07	7 / 3,07	27,64	9,21	399,73	51,82	451,54	1509,7	123037	0,0722
400 / 18	42 / 3,40	7 / 1,85	26	5,6	381,33	18,82	400,14	1199	85600	0,0758
400 / 51	54 / 3,05	7 / 3,05	27,5	9,2	394,53	51,14	445,68	1490	120481	0,0733
400 / 64	26 / 4,37	7 / 3,40	27,7	10,2	389,97	63,55	453,52	1572	129183	0,0741
400 / 93	30 / 4,15	19 / 2,50	29,1	12,5	405,8	93,27	499,06	1851	173715	0,0711
450 / 31,1	45 / 3,57	7 / 2,38	28,55	7,14	450,44	31,14	481,58	1484,6	107467	0,0646
450 / 58,3	54 / 3,26	7 / 3,26	29,32	9,77	450,73	58,43	509,16	1698,4	138417	0,0642
450 / 56	54 / 3,20	7 / 3,20	28,8	9,6	434,29	56,3	490,59	1640	131370	0,0666
500 / 34,6	45 / 3,76	7 / 2,51	30,09	7,52	499,67	34,64	534,3	1649,6	119407	0,0577
500 / 64,8	54 / 3,43	7 / 3,43	30,9	10,3	498,97	64,68	563,65	1887,1	153796	0,0578
500 / 26	42 / 3,90	7 / 2,20	30	6,6	501,73	26,61	528,34	1592	112548	0,0575
500 / 64	54 / 3,40	7 / 3,40	30,6	10,2	490,28	63,55	553,83	1852	148257	0,0588
550 / 71	54 / 3,60	7 / 3,60	32,4	10,8	549,65	71,25	620,91	2076	166164	0,0526
560 / 38,7	45 / 3,98	7 / 2,65	31,84	7,96	559,85	38,61	598,46	1847,5	133736	0,0515
560 / 70,9	54 / 3,63	19 / 2,18	32,7	10,9	558,85	70,92	629,77	2102,2	175592	0,0516
600 / 72	54 / 3,70	19 / 2,20	33,2	11	580,61	72,23	652,84	2170	183835	0,0498
630 / 43,6	45 / 4,22	7 / 2,81	33,79	8,44	629,4	43,41	672,81	2078,5	150453	0,0458
630 / 79,8	54 / 3,85	19 / 2,31	34,69	11,56	628,65	79,63	708,27	2365	191772	0,0459
710 / 49,1	45 / 4,48	7 / 2,99	35,86	8,96	709,35	49,15	758,5	2342,4	169559	0,0406
710 / 89,9	54 / 4,09	19 / 2,45	36,82	12,27	709,47	89,57	799,04	2665,3	216214	0,0407
800 / 101,3	54 / 4,34	19 / 2,61	39,09	13,03	798,85	101,65	900,5	3003,2	243520	0,0361

Aluminium Single Wire

Al



info@borsan.it



Construction and Technical Info

Conductor	Product Diameter Material	9,5 ± 0,5 - 12 ± 0,5 mm Aluminium
Packing	Aluminium wire rods according to customer's request 2-4 tons of free casting 1-2 tons shipped on tight turns as wood pallets.	

Application

Single wires (annealed/hard drawn) are produced according to orders in rod break down machine and they are consumed for in-house requirements as raw material or served to direct sale.

Chemical Specifications

In percentages acc. to EN AW 1370,EAI 99.7

Al	Fe	Si	Cu	Zn	Ti	Mn	Mg	Cr	B
99,7	0,2	0,1	0,02	0,04	0,01	0,01	0,02	0,01	0,02

General Information

CORE COLORS

CABLE DESIGNATIONS

CONDUCTOR CONSTRUCTIONS

INSULATION MATERIAL PROPERTIES

HARMONIZATION

CUSTOM CABLE DEVELOPMENT FORM

Core colors according to VDE 0293, HD 308 S2

Color table for cables and cordons with green-yellow core

NUMBER OF CORES	CORE COLORS				
	PROTECTIVE CONDUCTOR	OTHER CONDUCTORS			
3	Green-Yellow	Blue	Brown		
4	Green-Yellow	Brown	Black	Grey	
5	Green-Yellow	Blue	Brown	Black	Grey
6 and more	Green-Yellow	Black with number printing			

Color table for cables and cordons without green-yellow core

NUMBER OF CORES	CORE COLORS				
2	Blue	Brown			
3	Brown	Black	Grey		
4	Blue	Brown	Black	Grey	
5	Blue	Brown	Black	Grey	Black
6 and more	Black with number printing				

Core colors according to DIN 47100

COLOR	CORE-NO.	COLOR	CORE-NO.	COLOR	CORE-NO.
white	1	brown/blue	22	pink/black	42
brown	2	white/red	23	blue/black	43
green	3	brown/red	24	red/black	44
yellow	4	white/black	25	white/brown/black	45
grey	5	brown/black	26	yellow/green/black	46
pink	6	grey/green	27	grey/pink/black	47
blue	7	yellow/grey	28	red/blue/black	48
red	8	pink/green	29	white/green/black	49
black	9	yellow/pink	30	brown/green/black	50
violet	10	green/blue	31	white/yellow/black	51
grey/pink	11	yellow/blue	32	yellow/brown/black	52
red/blue	12	green/red	33	white/grey/black	53
white/green	13	yellow/red	34	grey/brown/black	54
brown/green	14	green/black	35	white/pink/black	55
white/yellow	15	yellow/black	36	pink/brown/black	56
yellow/brown	16	grey/blue	37	white/blue/black	57
white/grey	17	pink/blue	38	brown/blue/black	58
grey/brown	18	grey/red	39	white/red/black	59
white/pink	19	pink/red	40	brown/red/black	60
pink/brown	20	grey/black	41	black/white	61
white/blue	21				

Core colors according to AWG

COLOR	CORE-NO.	COLOR	CORE-NO.	COLOR	CORE-NO.
black	1	brown-red	21	yellow-blue	41
brown	2	brown-orange	22	yellow-purple	42
red	3	brown-yellow	23	yellow-grey	43
orange	4	brown-green	24	yellow-white	44
yellow	5	brown-blue	25	grey-black	45
green	6	brown-purple	26	grey-brown	46
blue	7	brown-grey	27	grey-red	47
purple	8	brown-white	28	grey-orange	48
grey	9	green-black	29	grey-yellow	49
white	10	green-brown	30	grey-green	50
white-black	11	green-red	31	grey-blue	51
white-brown	12	green-orange	32	grey-purple	52
white-red	13	green-blue	33	grey-white	53
white-orange	14	green-purple	34	orange-black	54
white-yellow	15	green-grey	35	orange-brown	55
white-green	16	green-white	36	orange-red	56
white-blue	17	yellow-black	37	orange-yellow	57
white-purple	18	yellow-brown	38	orange-green	58
white-grey	19	yellow-red	39	orange-blue	59
brown-black	20	yellow-orange	40	orange-purple	60

Cable designation according to VDE 0250

1	2	3	4	5	6	7	x	8
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1. STANDARD		
	N	VDE-type
	(N)/X	Based on VDE
2. INSULATION MATERIAL		
	Y	PVC
	4Y	Polyamide
	5Y	PTFE
	6Y	FEP
	9Y	Polypropylene
	11Y	Polyurethane (PUR)
	2X	XLPE
	G	Elastomer
	2G	Silicone
	3G	EPR-rubber
	4G	EVA
	5G	Polychloroprene
	HX	LSOH
3. CABLE DESCRIPTION		
	A	Single core
	D	Solid wire
	AF	Single core, fine stranded
	F	Copper conductor
	L	Fluorescent tube cable
	LH	Connecting cable for low mechanical stress
	MH	Connecting cable for medium mechanical stress
	SH	Connecting cable for high mechanical stress
	SSH	Connecting cable for special mechanical stress
	SL	Control/welding cable
	S	Control cable
	LS	Light control cable
	FL	Flat cable
	Si	Silicone cable
	Z	Twin cable
	GL	Glass fibre
	Li	Stranded wires acc to. VDE 812
	LiF	Fine stranded wires acc. to VDE 812
4. SPECIAL CONSTRUCTIONS		
	T	Supporting element
	ö	Oil-resistant
	u	Flame-resistant
	w	Heat-/weather-resistant
	FE	Fire-resistant
	C	Screen
	S	Steel armoured
5. SHEATHING MATERIALS		
	P	Polyurethane
	...	SECTION 2
6. PROTECTIVE CONDUCTOR		
	-O	Without green/yellow core
	-J	With green/yellow core
7. NUMBER OF CORES		
8. CROSS-SECTION OF CONDUCTOR		

Cable designation according to VDE 0281/0282

1	2	3	4	5	6	7	8	9
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1. STANDARD		
	H	Harmonized type (HAR)
	A	Authorised national standards
2. NOMINAL VOLTAGE		
	01	100 V
	03	300/300 V
	05	300/500 V
	07	450/750 V
3. INSULATION MATERIALS		
	V	PVC
	V2	PVC (90 °C)
	V3	PVC, cold-resistant
	B	EPR-rubber (90 °C)
	G	EVA
	E	PE
	R	Natural or synthetic rubber
	S	Silicone rubber
	X	XLPE
	Z	LSOH compound
	zZ	Halogen-free compound (solar cable)
4. SHEATHING MATERIALS		
	V	PVC
	V2	PVC (90 °C)
	V3	PVC, cold-resistant
	V4	PVC, cross-linked
	V5	PVC, oil-resistant
	R	Natural or synthetic rubber
	N	Chloroprene rubber
	N2	Chloroprene rubber for welding cables
	N4	Chloroprene rubber, heat-resistant
	N8	Chloroprene rubber, water-resistant
	J	Glass fibre braid
	T	Textile braid
	Q	Polyethurane (PUR)
	Q4	Polyamide
	Z	LSOH compound
5. SPECIAL CONSTRUCTIONS		
	C	Concentric copper conductor
	C4	Copper braided screen
	H	Flat, divisible cords
	H2	Flat cable, non divisible cords
	H6	Flat cable, non divisible cords for elevators
	H8	Spiral cable
6. CONDUCTOR FORM		
	U	Round, solid
	R	Round, stranded
	K	Fine stranded, fixed installation
	F	Fine stranded, flexible cords
	H	Extra finely stranded, highly flexible
	Y	Tensile conductor
	D	Fine stranded for welding cables
	E	Extra finely stranded for welding cables, highly flexible
7. NUMBER OF CORES		
8. PROTECTIVE CONDUCTOR		
	X	Without green/yellow core
	G	With green/yellow core
9. CROSS-SECTION OF CONDUCTOR		

Cable designation according to VDE 0815/16

1	2	3	4	5	6	x	7	x	8	9	10
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1. STANDARD		
	A	Outdoor cable
	G	Mining cable
	J	Installation cable
	L	Insulated cord
	S	Patchcord
	Li	Equipment wire with fine stranded conductor
	RD	Rhenomatic cable
	RE	Instrumentation cable
2. ADDITIONAL SPECIFICATIONS		
	B	Lightning protection
	J	Induction protection
	E	Industry electronics
3. INSULATION MATERIALS		
	Y	PVC
	2Y	Polyethylen
	02Y	Cell-PE
	02YS	Foam-Skin
	5Y	PTFE (Teflon®)
	6Y	FEP (Teflon®)
	7Y	ETFE (Teflon®)
	P	Paper
4. SPECIAL CONSTRUCTION		
	F	Petroleum jelly filler
	L	Aluminium sheath
	LD	Corrugated aluminium sheath
	(L)	Laminated aluminium sheath
	C	Copper braided screen
	(St)	Screen of plastic coated aluminium foil
	(K)	Copper tape screen
	(B)	Armouring
	(Z)	Steel wire armouring
	(Zg)	Strain bearing element with glass yarn bundles
	(ZN)	Strain bearing element nonmetallic
	W	Corrugated steel sheath
	M	Lead sheath
	b	Armouring
	c	Jute jacket+ bituminous compound
	E	Compound with embedded tape
5. SHEATHING MATERIALS		
	...	SECTION 3
6. NUMBER OF ELEMENTS		
		Number of stranding elements
7. STRANDING ELEMENTS		
	1	Single core
	2	Paired core
	4	Quad core
8. CONDUCTOR DIAMETER		
9. TYPE OF STRANDING		
	F	Star-quad (railway)
	St	Star-quad (phantom circuit, long distance)
	St I	Star-quad (long distance)
	St III	Star-quad (subscriber lane)
	TF	Star-quad for carrier frequency
	PiMF	Pair in metal foil
	DIMF	Triple in metal foil
	ViMF	Quad in metal foil
10. STRANDING LAYOUT		
	Lg	Stranding in layers
	Bd	Stranding in bundles

Cable designation according to VDE 0276

1	2	3	4	5	6	8	9	10	11	12	

1. STANDARD	N	VDE-type
2. CONDUCTOR		
		Copper
	A	Aluminium
3. INSULATION MATERIALS		
	Y	PVC
	2Y	PE
	2X	XLPE
	H	HFFR
4. CONCENTRIC CONDUCTOR		
	C	Longitudinal lay
	CW	Undulated
5. SCREEN		
	S	Joint copper shield
	SE	Individually screened cores
6. METAL SHEATH		
	K	Lead
7. PLASTIC SHEATH OR INNER PROTECTION		
	...	SECTION 3
8. ARMOURING		
	F	Flat steel wire
	R	Round steel wire
	G	Steel tape
9. OUTER SHEATH		
	...	SECTION 3
10. PROTECTIVE CONDUCTOR		
	-J	With green/yellow core
	-O	Without green/yellow core
11. NUMBER OF CORES		
12. CONDUCTOR FORM		
	RE	Round, solid
	RM	Round, stranded
	SE	Sector shaped, solid
	SM	Sector shaped, stranded

Conductor constructions according to AWG

AWG NO.	AWG-MAKE-UP	CONDUCTOR MAKE-UP	CROSS-SECTION	CONDUCTOR OUTER DIAMETER - Ø	CONDUCTOR RESISTANCE	CONDUCTOR WEIGHT
	N X AWG	N X MM	MM ²	MM	OHM/KM	KG/KM
36	solid	solid	0,013	0,127	1460,0	0,116
36	7/44	7 x 0,05	0,014	0,152	1271,0	0,125
34	solid	solid	0,020	0,160	918,0	0,178
34	7/42	7 x 0,064	0,022	0,192	777,0	0,196
32	solid	solid	0,032	0,203	571,0	0,284
32	7/40	7 x 0,078	0,034	0,203	538,0	0,302
32	19/44	19 x 0,05	0,037	0,229	448,0	0,329
30	solid	solid	0,051	0,254	365,0	0,45
30	7/38	7 x 0,102	0,057	0,305	339,0	0,507
30	19/42	19 x 0,064	0,061	0,305	286,7	0,543
28	solid	solid	0,080	0,330	232,0	0,71
28	7/36	7 x 0,127	0,087	0,381	213,0	0,774
28	19/40	19 x 0,078	0,091	0,406	186,0	0,81
27	7/35	7 x 0,142	0,111	0,457	179,0	0,988
26	solid	solid	0,128	0,409	143,0	1,14
26	10/36	10 x 0,127	0,127	0,533	137,0	1,13
26	19/38	19 x 0,102	0,155	0,508	113,0	1,38
26	7/34	7 x 0,160	0,141	0,483	122,0	1,25
24	solid	solid	0,205	0,511	89,4	1,82
24	7/32	7 x 0,203	0,227	0,610	76,4	2,02
24	10/34	10 x 0,160	0,201	0,582	85,6	1,79
24	19/36	19 x 0,127	0,241	0,610	69,2	2,14
24	41/40	41 x 0,078	0,196	0,582	84,0	1,74
22	solid	solid	0,324	0,643	55,3	2,88
22	7/30	7 x 0,254	0,355	0,762	48,4	3,16
22	19/34	19 x 0,160	0,382	0,787	45,1	3,4
22	26/36	26 x 0,127	0,330	0,762	52,3	2,94
20	solid	solid	0,519	0,813	34,6	4,61
20	7/28	7 x 0,320	0,562	0,965	33,8	5,0
20	10/30	10 x 0,254	0,507	0,889	33,9	4,51
20	19/32	19 x 0,203	0,615	0,940	28,3	5,47
20	26/34	26 x 0,160	0,523	0,914	33,0	4,65
20	41/36	41 x 0,127	0,520	0,914	32,9	4,63
18	solid	solid	0,823	1,020	21,8	7,32
18	7/26	7 x 0,404	0,897	1,219	19,2	7,98
18	16/30	16 x 0,254	0,811	1,194	21,3	7,22
18	19/30	19 x 0,254	0,963	1,245	17,9	8,57
18	41/34	41 x 0,160	0,824	1,194	20,9	7,33
18	65/36	65 x 0,127	0,823	1,194	21,0	7,32
16	solid	solid	1,310	1,290	13,7	11,66
16	7/24	7 x 0,511	1,440	1,524	12,0	12,81
16	65/34	65 x 0,160	1,310	1,499	13,2	11,65
16	26/30	26 x 0,254	1,317	1,499	13,1	11,72
16	19/29	19 x 0,287	1,229	1,473	14,0	10,94
16	105/36	105 x 0,127	1,330	1,499	13,1	11,84
14	solid	solid	2,080	1,630	8,6	18,51
14	7/22	7 x 0,643	2,238	1,854	7,6	19,92
14	19/27	19 x 0,361	1,945	1,854	8,9	17,31
14	41/30	41 x 0,254	2,078	1,854	8,3	18,49
14	105/34	105 x 0,160	2,111	1,854	8,2	18,79
12	solid	solid	3,31	2,05	5,4	29,46
12	7/20	7 x 0,813	3,63	2,438	4,8	32,30
12	19/25	19 x 0,455	3,09	2,369	5,6	27,50
12	65/30	65 x 0,254	3,292	2,413	5,7	29,29
12	165/34	165 x 0,160	3,316	2,413	5,2	29,51
10	solid	solid	5,26	2,59	3,4	46,81
10	37/26	37 x 0,404	4,74	2,921	3,6	42,18
10	49/27	49 x 0,363	5,068	2,946	3,6	45,10
10	105/30	105 x 0,254	5,317	2,946	3,2	47,32
8	49/25	49 x 0,455	7,963	3,734	2,2	70,87
8	133/29	133 x 0,287	8,604	3,734	2,0	76,57
8	655/36	655 x 0,127	8,297	3,734	2,0	73,84
6	133/27	133 x 0,363	13,764	4,676	1,5	122,49
6	259/30	259 x 0,254	13,123	4,674	1,3	116,79
6	1050/36	1050 x 0,127	13,316	4,674	1,3	118,51

Conductor constructions according to VDE 0295 / EN 60228

CROSS-SECTION	MULTI WIRE (CLASS 2)	SEVERAL WIRE (CLASS 2)	FINE WIRE (CLASS 5)	EXTRA FINE WIRE (CLASS 6)			
MM2	CONDUCTOR MAKE-UP (N X MM)						
0.14				~ 18 x 0.10	~ 18 x 0.1	~ 36 x 0.07	~ 72 x 0.05
0.25			~ 14 x 0.15	~ 32 x 0.10	~ 32 x 0.1	~ 65 x 0.07	~ 128 x 0.05
0.34		7 x 0.25	~ 19 x 0.15	~ 42 x 0.10	~ 42 x 0.1	~ 88 x 0.07	~ 174 x 0.05
0.38		7 x 0.27	~ 19 x 0.16	~ 19 x 0.16	~ 48 x 0.1	~ 100 x 0.07	~ 194 x 0.05
0.5	7 x 0.30	7 x 0.30	~ 16 x 0.20	~ 28 x 0.15	~ 64 x 0.1	~ 131 x 0.07	~ 256 x 0.05
0.75	7 x 0.37	7 x 0.37	~ 24 x 0.20	~ 42 x 0.15	~ 96 x 0.1	~ 195 x 0.07	~ 384 x 0.05
1.0	7 x 0.43	7 x 0.43	~ 32 x 0.20	~ 56 x 0.15	~ 128 x 0.1	~ 260 x 0.07	~ 512 x 0.05
1.5	7 x 0.52	7 x 0.52	~ 30 x 0.25	~ 84 x 0.15	~ 192 x 0.1	~ 392 x 0.07	~ 768 x 0.05
2.5	7 x 0.67	~ 19 x 0.41	~ 50 x 0.25	~ 140 x 0.15	~ 320 x 0.1	~ 651 x 0.07	~ 1280 x 0.05
4	7 x 0.85	~ 19 x 0.52	~ 56 x 0.30	~ 224 x 0.15	~ 512 x 0.1	~ 1040 x 0.07	
6	7 x 1.05	~ 19 x 0.64	~ 84 x 0.30	~ 192 x 0.20	~ 768 x 0.1	~ 1560 x 0.07	
10	7 x 1.35	~ 49 x 0.51	~ 80 x 0.40	~ 320 x 0.20	~ 1280 x 0.1	~ 2600 x 0.07	
16	7 x 1.70	~ 49 x 0.65	~ 128 x 0.40	~ 512 x 0.20	~ 2048 x 0.1		
25	7 x 2.13	~ 84 x 0.62	~ 200 x 0.40	~ 800 x 0.20	~ 3200 x 0.1		
35	7 x 2.52	~ 133 x 0.58	~ 280 x 0.40	~ 1120 x 0.20			
50	~ 19 x 1.83	~ 133 x 0.69	~ 400 x 0.40	~ 705 x 0.30			
70	~ 19 x 2.17	~ 189 x 0.69	~ 356 x 0.50	~ 990 x 0.30			
95	~ 19 x 2.52	~ 259 x 0.69	~ 485 x 0.50	~ 1340 x 0.30			
120	~ 37 x 2.03	~ 336 x 0.67	~ 614 x 0.50	~ 1690 x 0.30			
150	~ 37 x 2.27	~ 392 x 0.69	~ 765 x 0.50	~ 2123 x 0.30			
185	~ 37 x 2.52	~ 494 x 0.69	~ 944 x 0.50	~ 1470 x 0.40			
240	~ 37 x 2.87	~ 627 x 0.70	~ 1225 x 0.50	~ 1905 x 0.40			
300	~ 61 x 2.50	~ 790 x 0.70	~ 1530 x 0.50	~ 2385 x 0.40			
400	~ 61 x 2.89		~ 2035 x 0.50				
500	~ 61 x 3.23		~ 1768 x 0.60				
630	~ 91 x 2.97		~ 2286 x 0.60				

CONDUCTOR RESISTANCE AT 20 °C (Ω/KM) (MAX. VALUE)				
CROSS SECTION (MM2)	MADE OF WIRES WITH METAL SHEATH		MADE OF WIRES WITH BARE COPPER	
	CLASS 2	CLASS 5 AND 6	CLASS 2	CLASS 5 AND 6
0.08		252.0		243.0
0.14		148.0		138.0
0.25		79.9		79.0
0.34		57.5		57.0
0.38		52.8		48.5
0.5	36.7	40.1	36.0	39.0
0.75	24.8	26.7	24.5	26.0
1	18.2	20.0	18.1	19.5
1.5	12.2	13.7	12.1	13.3
2.5	7.56	8.21	7.41	7.98
4	4.70	5.09	4.61	4.95
6	3.11	3.39	3.08	3.30
10	1.84	1.95	1.83	1.91
16	1.16	1.24	1.15	1.21
25	0.734	0.795	0.727	0.780
35	0.529	0.565	0.524	0.554
50	0.391	0.393	0.387	0.386
70	0.270	0.277	0.268	0.272
95	0.195	0.210	0.193	0.206
120	0.154	0.164	0.153	0.161
150	0.126	0.132	0.124	0.129
185	0.100	0.108	0.0991	0.106
240	0.0762	0.0817	0.0754	0.0801
300	0.0607	0.0654	0.0601	0.0641
400	0.0475		0.0470	
500	0.0369		0.0366	
630	0.0286		0.0283	
800	0.0224		0.0221	
1000	0.0177		0.0176	

Insulation Material Properties

Polyvinyl Chloride (PVC)

A PVC jacket is a relatively inexpensive and easy-to-use material, with the potential to be used in diverse applications. The maximum temperature range is -55°C to 105°C and is flame, moisture, and abrasion resistant. It also holds up against gasoline, ozone, acids, and solvents.¹ It can also be used for medical and food related purposes as it is odorless, tasteless, and non-toxic. PVC jackets can be used in both heavy and thin wall applications. PVC should not be used when flexibility and an extended flex life are required at low temperatures. When used in retractile cord applications, it also shows below average flexibility. PVC jackets display high attenuation and capacitance loss, meaning that power is lost when used in an electrical system.

Semi-Rigid PVC (SR-PVC)

This is mainly used as a primary insulation and is very abrasion resistant. (For 30-16 gauge, a 10 mil. wall meets UL style 1061, 80°C, 300 volts.) Semi-Rigid PVC is also heat, water, acid, and alkali resistant, as well as flame retardant.

Polyethylene (PE)

This compound is used mostly in coaxial and low capacitance cables because of its exemplary electric qualities. Many times it is used in these applications because it is affordable and can be foamed to reduce the dielectric constant to 1.50, making it an attractive option for cables requiring high-speed transmission. Polyethylene can also be cross-linked to produce high resistance to cracking, cut-through, soldering, and solvents. Polyethylene can be used in temperatures ranging from -65°C to 80°C. All densities of Polyethylene are stiff, hard, and inflexible. The material is also flammable. Additives can be used to make it flame retardant, but this will sacrifice the dielectric constant and increase power loss.

Polyurethane (PUR)

Polyurethane is known for its extreme toughness, flexibility, and flex life, even in low temperatures. It also has excellent ratings for chemical, water, and abrasion resistance. This material works well in retractile cord applications and can be a good option for salt-spray and low-temperature military purposes. Polyurethane is a flammable material. The flame retardant version sacrifices strength and surface finish. Polyurethane's main disadvantage though, is its poor electrical properties, making it suitable for s only.

Polypropylene (PP)

This material is very similar to Polyethylene, but has a wider temperature range of -30°C to 105°C. It is used primarily for thin wall primary insulations. Polypropylene can be foamed to improve its electrical properties.

Silicone

This material is extremely heat resistant and flame retardant and can be used in temperatures up to 180°C. It is moderately abrasion resistant. Silicone is also extremely flexible. Benefits include a long storage life and good bonding properties necessary in many electrical applications.

Ethylene Propylene Rubber (EPR)

EPR is known for its excellent thermal characteristics and¹ electrical properties, allowing a smaller cross-sectional area for the same load carrying capacity of other cables. It is commonly used in high-voltage cables. The flexibility of this material also makes it appropriate for temporary installations and applications in the mining industry. These rubbers are also valuable for their heat, oxidation, weathering, water, acid, alcohol, and alkali resistance. EPR can be used in the temperature range of -50°C to 160°C. EPR is not as tear resistant as other insulation options. It is also relatively soft and may require more care during installation to avoid damage.

Ethylene Propylene Diene Monomer (EPDM)

This synthetic rubber insulation displays outstanding heat, ozone, weather, and abrasion resistance. EPDM also exhibits excellent electrical properties. Further benefits include excellent flexibility at both high and low temperatures, from -55°C to 150°C, as well as good dielectric strength. EPDM replaces silicone rubber in some applications.

Insulation Material Properties

MATERIAL	SHORT NAME	VDE CODE	DENSITY	HALOGEN CONTENT	HARDNESS	TENSILE STRENGTH	ELONGATION	DIELECTRIC STRENGTH
			g/cm3	%	SHORE	MPA	%	KV/MM
Polyvinyl chloride (plasticized)	PVC-P	Y	1.30–1.45	35	85A– 95A	>10	>150	>10
Polyvinyl chloride, semi rigid	SR-PVC	Y	1.24–1.34	40	85A– 95A	>15	>150	>10
Polyethylene	PE	2Y	0.92– 0.95	0	50D– 62D	>15	>300	>30
Polyamide	PA	4Y	1.01	0	– /72D	> 40	>300	>10
Tetrafluoroethylene hexafluoropropylene	FEP	6Y	2.14	75	– /55D	>15	>200	>30
Ethylen tetrafluoroethylene	ETFE	7Y	1.70	60	– /75D	>30	>200	>30
Polypropylene	PP	9Y	0.91	0	– /70D	>15	>200	>30
Polypropylene, flame-retardant	PP-FR	9Y	1.05–1.3	10	– /70D	>15	>200	>20
Perfluoroalkoxy copolymer	PFA	51Y	2.15	75	– /55D	>20	>200	>30
Polyvinylidenefluorid	PVDF	10Y	1.8	35	– /78D	>25	>100	>30
Thermoplastic polyether polyurethane	TPE-U	11Y	1.12	0	85A– 54D	>30	> 400	>10
Thermoplastic polyether ester elastomer	TPE-E	12Y	1.16–1.25	0	40D–72D	>25	> 400	>10
Thermoplastic polyester elastomer	TPE-E	13Y	1.25–1.28	0	– /55D	>30	>300	>10
Thermoplastic polystyrene block copolymer	TPE-S	31Y	1.10–1.30	0–10	55D– 65D	>15	>200	>10
Thermoplastic polyamide elastomer	TPE-A	41Y	1.01–1.06	0	75A–70D	>25	> 400	>10
Thermoplastic polyolefn elastomer	TPE-O	91Y	0.95–1.25	0–10	87A/–	>10	>300	>20
Ethylene vinyl acetate	E/VA	4G	1.30–1.40	0	80A– 85A	>7	>150	>10
Polyvinyl chloride, cross-linked	PVC-X	X	1.35	30	95A/–	>10	>150	>10
Polyethylene, cross-linked (XLPE)	PE-X	2X	1.1	10	95A/–	>10	>200	>20
Polyethylene, cross-linked, halogen-free (XLPE)	PE-X	2X	1.4	0	– /42D	>10	>200	>10

MATERIAL	SHORT NAME	VDE CODE	MAX. WORKING TEMPERATURE	COLD WINDING TEST	ABRASION RESISTANCE	FLAME RETARDANT	OIL RESISTANCE	ACID / ALKALI RESISTANCE
			°C	°C				
Polyvinyl chloride (plasticized)	PVC-P	Y	105	–25/–40	+	+	+	+
Polyvinyl chloride, semi rigid	SR-PVC	Y	80	–30	+	+	+	+
Polyethylene	PE	2Y	90	– 40	+	– –	–	+
Polyamide	PA	4Y	105	– 50	++	–	++	+
Tetrafluoroethylene hexafluoropropylene	FEP	6Y	210	– 65	++	++	++	++
Ethylen tetrafluoroethylene	ETFE	7Y	180	– 65	++	++	++	++
Polypropylene	PP	9Y	125	– 40	+	– –	+	+
Polypropylene, flame-retardant	PP-FR	9Y	125	– 40	+	+	+	+
Perfluoroalkoxy copolymer	PFA	51Y	260	– 80	++	++	++	++
Polyvinylidenefluorid	PVDF	10Y	150	–30	++	++	++	+
Thermoplastic polyether polyurethane	TPE-U	11Y	125	– 40	++	–	++	+
Thermoplastic polyether ester elastomer	TPE-E	12Y	90	– 40	++	–	++	–
Thermoplastic polyester elastomer	TPE-E	13Y	150	– 40	++	+/-	++	+
Thermoplastic polystyrene block copolymer	TPE-S	31Y	125	– 40	–	+/-	+	+
Thermoplastic polyamide elastomer	TPE-A	41Y	90	– 50	++	–	++	–
Thermoplastic polyolefn elastomer	TPE-O	91Y	125	– 40	–	+/-	–	+
Ethylene vinyl acetate	E/VA	4G	140	– 40	–	–	–	–
Polyvinyl chloride, cross-linked	PVC-X	X	105	– 40	++	+	+	+
Polyethylene, cross-linked (XLPE)	PE-X	2X	125	– 40	+	+	+	+
Polyethylene, cross-linked, halogen-free (XLPE)	PE-X	2X	125	– 40	+	+	+	+

Values on the above table are generic and subject to change with additives, especially for the fire behaviour. Please ask for support through info@borsan.it if you need further assistance!

Harmonization

To comply with the rules laid down by CENELEC*, countries are obliged to adopt certain IEC** standards, EN*** standards and the harmonization documents (HD) issued by CENELEC into their national specifications. This is in the interest of European and global harmonization. No technical deviations or additions are permitted.

The following table includes all those member countries known to have recognized the harmonization documents HD 21 and 22. The use of HAR-coded cables is thus possible in these countries without further national certification.

* European Committee for Electrotechnical Standardization (Comité Européen de Normalisation Electrotechnique)

** International Electrotechnical Commission

*** European Standards

COUNTRY	CERTIFICATION AUTHORITY	HARMONIZATION MARK
Spain	AENOR	AENOR <HAR>
Great Britain	BASEC	BASEC <HAR>
Northern Ireland	BASEC	BASEC <HAR>
Poland	BBJ-SEP	BBJ <HAR>
Portugal	CERTIF	<CERTIF> <HAR>
Switzerland	Electrosuisse	<SEV> <HAR>
Greece	ELOT	ELOT <HAR>
Czech Republic	EZÚ	<EZU> <HAR>
Italy	IMQ	IEMMEQU <HAR>
Sweden	Intertek Semko	SEMKO <HAR>
Netherlands	KEMA	KEMA-KEUR <HAR>
France	LCIE	USE <HAR>
Hungary	MEEI	MEEI <HAR>
Norway	NEMKO	<NEMKO><HAR>
Ireland	NSAI	<NSAI> <HAR>
Belgium	SGS Belgien	CEBEC <HAR>
Finland	SGS Fimko	FIMKO <HAR>
Turkey	TSE	TSE <HAR>
Denmark	UL Int'l DEMKO	DEMKO <HAR>
Germany	VDE	<VDE><HAR>
Austria	ÖVE	<ÖVE> <HAR>

Custom cable development form

A. SENDER INFO	1. YOUR COMPANY / VAT NUMBER	[]				
	2. YOUR NAME / SURNAME	[]				
	3. PHONE NUMBER / E-MAIL	[]				
	4. CITY / COUNTRY	[]				
B. DEMAND INFO	1. DATE	[Date of sending this form:]		[Date of first delivery:]		[Revision No.:]
	2. PERIOD OF DELIVERY	[] Only 1 delivery [] Every month [] Every 3 months [] Every 6 months [] Every year				
	3. QUANTITY FOR EACH PERIOD	[] km				
	4. PACKAGING TYPE	[] Wood drum [] Plastic drum [] Plywood drum [] Coil with shrink [] Carton box				
	5. QUANTITY IN ONE PACKAGE	[] meter				
	6. OTHER SUPPLIERS OF PRODUCT	[]				
	7. ANNUAL CABLE USAGE	Our cable usage for one year is approximately [] km. This includes <u>every cable type</u> we use.				
	8. NOTE	[]				
C. APPLICATION	1. AREA	[] Indoor [] Outdoor [] Underground []				
	2. FLEXIBILITY	[] Fixed installation [] Flexible [] Reverse bending [] Torsion [] Drag chain				
	3. MIN. BENDING RADIUS	[]				
	4. TEMPERATURE RANGE	Environment min / max [] / [] °C Permanent load min / max [] / [] °C				
	5. NOTE	[]				
D. CABLE TYPE INFO	1. NAME AND CODE OF THE CABLE	[Name:] [Code:]				
	2. MARKET	[]				
	3. REFERENCE STANDARD	[]				
	4. APPROVALS THAT YOU NEED	[]				
E. CONSTRUCTION	1. NO. OF CORES X CROSS SECTION	[]				
	2. CONDUCTOR MATERIALS	[] Bare copper [] Tinned copper [] Aluminium [] CCS [] Silvered copper				
	3. CONDUCTOR MAKE-UP	[] Solid (Class 1) [] Multi wire (Class 2)				
		[] Several wire (Class 2) [] Fine wire (Class 5) [] Extra fine wire (Class 6)				
		No. of cores x Cross section [] x [] mm² >> Number of wires x Diameter of one wire [] x [] mm				
		No. of cores x Cross section [] x [] mm² >> Number of wires x Diameter of one wire [] x [] mm				
		No. of cores x Cross section [] x [] mm² >> Number of wires x Diameter of one wire [] x [] mm				
	4. CONDUCTOR RESISTANCE	[] ohm/km				
	5. CORE INSULATION	[] PVC [] Polyurethane [] Polypropylene [] Polyethylene [] XL-Polyethylene				
		[] HFFR [] Polyester [] FEP [] Silicone []				
	6. CORE INSULATION THICKNESS	Minimum [] mm, average [] mm, diameter of insulated core is [] ± [] mm for [] mm²				
		Minimum [] mm, average [] mm, diameter of insulated core is [] ± [] mm for [] mm²				
		Minimum [] mm, average [] mm, diameter of insulated core is [] ± [] mm for [] mm²				
	7. CORE IDENTIFICATION - COLORS	[]				
	8. FILLER INFO	[]				
	9. BUNCHING TYPE	[] Twisted pairs [] Layer stranded [] All together []				
	10. BUNCHING NOTE	[]				
	11. INNER SHEATH MATERIAL	[] PVC [] Polyurethane [] Polypropylene [] Polyethylene [] XL-Polyethylene				
		[] HFFR [] Polyester [] Silicone []				
	12. INNER SHEATH THICKNESS	Minimum [] mm at any point, average [] mm, diameter of inner sheath is [] ± []				
	13. INNER SHEATH COLOR	[]				
	14. BRAIDING	[] Yes [] No [] Coverage [] Type [] Material []				
		On []				
	15. SCREEN	[] Yes [] No [] Coverage [] Type [] Material []				
		On []				
	16. ARMOR	[] Yes [] No [] Coverage [] Type [] Material []				
		On []				
17. ADDITIONAL COMPONENT	[] Yes [] No [] Coverage [] Type [] Material []					
	On []					
18. OUTER SHEATH MATERIAL	[] PVC [] Polyurethane [] Polypropylene [] Polyethylene [] XL-Polyethylene					
	[] HFFR [] Polyester [] FEP [] Silicone []					
19. OUTER SHEATH THICKNESS	Minimum [] mm at any point, average [] mm, diameter of cable is [] ± [] mm					
20. OUTER SHEATH COLOR	[] [RAL code:] [Finishing Type:]					
21. PRINTING ON CABLE	[]					
D. RESISTANCE	1. SPECIAL REQUIREMENT	[] Flame retardant [] UV resistant [] Oil resistant [] Abrasion resist. [] Water resistant				
		[] Halogen-free []				
E. ELECTRICAL VALUES	1. VOLTAGE	Operating voltage is [] V. Test voltage is [] V				
	2. CAPACITY	Conductor/conductor capacity is [] pF/m, conductor/shield capacity is [] pF/m				
F. REQUIRED TESTS	1. STANDARDS OF TESTS	[]				
		[]				
G. ADDITIONAL NOTES		[]				
		[]				

PLEASE INSERT
A PHOTOGRAPH
OR DRAWING
OF DESIRED
CABLE HERE



Contact

Via Marmolada 12/L,
Paderno Dugnano, 20037, (MI), Italy
CF 10128010963

T +39 0291082557
info@borsan.it